1904.

CITY & COUNTY OF BRISTOL.

ANNUAL REPORT

OF THE

Medical Officer of Health,

AND OF THE

General Medical Superintendent of the City Hospitals.

Printed by order of the Health Committee.

BRISTOL:
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1905.

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23 OCT. 1905

CITY OF BRISTOL.

Medical Officer of Health's Annual Report, 1904.

CORRECTIONS.

On Page 35, for "to probably empty" read "to properly empty."

On Page 105, Notification Table. In 4th Quarter column read as follows:—

Small Pox	8
Cholera, Choleraic Diarrhœa	0
Diphtheria	259
Membranous Croup	7
Erysipelas	82
Scarlet Fever	343
Typhus Fever	0
Enteric Fever	22
Relapsing Fever	0
Continued Fever	0
Puerperal Fever	11

HEALTH COMMITTEE,

1904-1905.

The Right Honourable The Lord Mayor:

Edward Burnet James, Esquire.

Chairman:

Councillor Colston Wintle, M.R.C.S.

Deputy Chairman:

Councillor A. J. Harris.

Alderman Terrett.

Councillor Henry Anstey.
(*Chairman of Finance Sub-Committee*)

„ Frederick Burris

„ H. W. Carter.

„ T. M. Carter, M.R.C.S.

„ John Coole.

„ E. M. Dyer.

Councillor Wm. Jennings.

„ H. McQuade, M.D.

„ Frank Moore.

„ W. G. Pope.

„ Saml. Shirley.

„ C. J. Thorn.

CITY OF BRISTOL.

HEALTH DEPARTMENT, 1904.

Medical Officer of Health : D. S. Davies, M.D., D.P.H.
Deputy-Medical Officer of Health : J. C. Heaven, L.R.C.P., D.P.H.
Statistical Clerk : W. N. Brown.

Chief Inspector : J. W. Kirley.
Superintendent Inspector : ‖*T. Lowther.
District Inspectors (12) :

	District.		District.
H. Calcutt	(Central)	*†F. R. Slade	(St. Paul)
G. E. Bush	(Bedminster)	*†A. E. King	(Knowle)
*H. Hasell	(Horfield)	*†H. C. Leat	(S. George W.)
*J. Wilkinson	(Clifton)	*†T. J. Crofts	(Easton)
*H. J. Kirley	(Cotham)	*F. Kirley	(S. George E.)
*J. T. Lyons	(Stapleton)	*G. Best	(Bedminster)

Inspector of Common Lodging Houses and Bakehouses :
*S. O. Dimond.

Inspector of Dairies, Cowsheds and Milkshops :
*†E. J. Casely.

Inspectors of Slaughter Houses, Meat and Fish :
S. Thomas. | *A. Gitsham.

Inspectors of Workshops, &c. :
*†A. W. Griffiths. | *W. J. Wreford.

Chief Clerk : L. W. A. Statton.
Clerk : C. W. M. Vincent
Junior Clerk : J. G. Watson.

CITY HOSPITALS.

General Medical Superintendent : (Supervisory) D. S. Davies, M.D., D.P.H.
Visiting Medical Officer at Novers Hill and Clift House Hospitals :
G. C. Paull, M.R.C.S.
Resident Medical Officer at Ham Green Hospital : J. Fletcher, M.D., D.P.H.

PORT OF BRISTOL.

Port Medical Officer of Health : D. S. Davies, M.D., D.P.H.
Assistant Port M.O.H. : J. C. Heaven, M.R.C.S., D.P.H.
Chief Inspector : S. Dimond.
Port Inspector : A. Dickens.
Assistant Port Inspector and Boatman : J. Rex.
Master of S.S. "Luath" : §G. Jackson.

‖ Surveyor's Certificate, Sanitary Institute.
* Inspector's Certificate, Sanitary Institute.
† Registered Plumber.
§ Certificated Pilot for Bristol Channel.

REPORT.

PART 1.

Population, Acreage, and General Sanitary Condition.

My Lord Mayor and Gentlemen,

As a result of the Bristol Extension Act, 1897, the old Registration Sub-District of Castle Precincts, with a considerable portion of S. Paul, became merged in S. Mary Redcliff; and that of S. James in S. Augustine: also, in 1897, that portion of the Registration Sub-District of Westbury within the Municipal area, was attached to Clifton, to which Avonmouth had been already added by the Extension Act of 1895. But Avonmouth has since been transferred to the District of Ashley.

As a result of extension also, that portion of the Urban Sanitary District of Horfield which came into the City was added to the portion of the Ashley Registration Sub-District already within the City.

S. George and Stapleton were also brought in from the County, and retained their limits and their names.

Bedminster has also, for purposes of these statistics, been taken to include the parts of the Somerset Districts added by the Extension Act of 1897, in addition to the old Urban District of Bedminster. These have been re-divided into the two Urban Registration Sub-Districts of Bedminster and Knowle.

Bristol Extension Act, 1904.

By the extension of 1904, a further addition of 13,000 persons, upon an area of 5,347 acres has increased the total population of the City, at the end of 1904 to 354,000 persons, living upon an area of 17,000 acres.

Table A.

Showing Population, Acreage, and Number of Persons per Acre (Density) in each of the Registration Sub-Districts of Bristol for 1891 and 1904.

Registration Sub-Districts, 1891. (Census Year)	Acreage.	Population middle of 1891.	Density, 1891.	Registration Sub-District, 1904.	† Acreage.	Population middle of 1904.	Density 1904.
S. Mary Redcliff ...	170	9,287	54·6	S. Mary Redcliff ..	350	11,925	34·0
Castle Precincts ...	119	5,558	46·7	(Including Castle Precincts and part of S. Paul.)			
S. Paul	148	19,046	128·6				
S. James	68	7,817	114·9	‡ S. Paul and S. Augustine	460	30,868	67·0
S. Augustine ...	250	13,788	55·1				
Bedminster	992	45,812	46·1	Bedminster, Knowle, etc. (Including Somerset added area.)	1,924 1,184	79,184	25·4
Clifton	921	29,361	31·8	Clifton	1,504	44,446	29·5
Ashley	434	24,190	55·7	Ashley ... . (Including Avonmouth and part of Horfield.)	1,365	42,842	31·3
S. Philip	744	51,650	69·6	S. George	1,846	61,670	33·4
Westbury	692	15,540	22·4	S. Philip	736	48,810	66·3
				Stapleton	2,573	23,459	9·1
				Westbury-on-Trym (Including the whole of Shirehampton, Westbury-on-Trym, part of Henbury and the upper portion of Horfield, added to City from Barton Regis Rural District, 1st October, 1904.)	5,347	13,443	2·5
Bristol City (1891)	4,538*	222,049	48·93	Bristol City (1901) †	17,289	356,647	20·62

* Ordnance calculation, including water areas.

† Census, 1901, and including district added on 1st October, 1904.

‡ The Registrar General of Births, Deaths and Marriages, ordered and declared, that on and after 1st April, 1904, S. Augustine Sub-District shall be united with S. Paul Sub-District, and the enlarged Sub-District so formed, should be called and known as S. Paul and S. Augustine Sub-District.

Water Supply.

The Water Supply is in the hands of a Private Company, and is obtained by gravitation from springs in the triassic conglomerates, and in the carboniferous limestone on the sides of the Mendips, at points from 5 to 16 miles from the City. The water from two of these springs (Sherborne and Coldbath) is brought directly into the City; that from the other springs is intercepted by the storage reservoirs at Barrow Gurney, 310 feet above Ordnance datum, with a present holding capacity of 750,000,000 gallons, whence it is brought into the City, joining the direct supplies at Redcliff. The combined waters supply the lower parts of the City, *en route*, and also rise by gravitation to the pumping station and reservoir at Oakfield Road (200 feet above O.D.), from which they are pumped up to the Durdham Down service Reservoir (320 feet above O.D.) for the supply of Clifton and the higher parts of the City.

A supplementary supply is obtained from deep wells at Chelvey, eight miles from Bristol, sunk in the new red sandstone (triassic).

The water is supplied to the City at constant service, and the average daily supply per head is calculated at about 22 gallons.

All water supplied from the Barrow Store Reservoirs is filtered before delivery.

The Company has power to make an annual charge for each closet flush, in addition to the charges for other domestic purposes (not now enforced in the case of a second W.C. cistern in houses of the gross value of £30 and under), hence very many out-door closets throughout the City are dependent upon hand-flushing. After 25th March, 1896, the charge for flushing cisterns in dwelling-houses of the gross value of £20 and under, was reduced to one shilling per quarter.

Analysis of Water supplied by the Bristol Water Works Company.

(Results stated in Grains per Imperial Gallon).

	GAUGE HOUSE, BARROW. (Unfiltered Water.)	COLD BATH SPRING.	DEEP WELL, CHELVEY.
Colour in 2-ft. Tube...	Greenish Brown	Pale Green	Pale Green
Sediment	Sand, Algæ	None	None
Saline Ammonia	·001	·0007	·0002
Albuminoid Ammonia	·004	·0020	·0010
Nitrogen as Nitrates	·09	·12	·17
Nitrites..................	None	None	None
Chlorine as Chlorides	·97	·91	1·13
Oxygen absorbed in 4 hours	·039	·003	·014
Total dissolved Solids	19·70	23.50	22·54
Lime	9·06	11·05	9·88
Magnesia	·65	.92	1·18
Sulphuric Anhydride ($S.O._3$)	·86	·98	·83
Lead, Copper or Zinc	None	None	None
Total Hardness	16·0	20·5	20·0
Permanent do..........	3·5	4·5	5·0

F. WALLIS STODDART, F.I.C., F.C.S.,

City Analyst.

New Source of Supply.—In 1888, the Company obtained powers to take the Rickford Spring, near Blagdon, and the Langford Spring, at Langford, subject to reservation of prior claims of the district upon those springs; and in 1889, they obtained powers to make a reservoir by impounding the river Yeo. This reservoir, to contain a maximum of 1,700,000,000 gallons, will receive the water from these combined sources, and from it the water will be lifted to join the storage at Barrow. The source of the Yeo is from deep springs similar to those furnishing the established supply. These works will very shortly come into operation.

Sewerage, Drainage, Scavenging, etc.

All these matters are reported upon annually by the City Engineer to the Sanitary Committee.

Parks and Open Spaces.

The Parks and Open Spaces available for the recreation of the people comprise in all 678 acres, including Clifton and Durdham Down, which have a combined area of 442 acres.

Of the 678 acres, 236 are laid out as parks, gardens, or playgrounds; but the public has the right to wander over about 540 acres. Wicket pitches are allowed on Durdham Down and in four of the parks. The net annual cost of the Parks and Open Spaces is about £4,000.

Medical Inspection in Public Elementary Schools.

In previous Reports I have pointed out the necessity for some medical supervision over school children, not only in regard to the extension of communicable fevers through school attendance, but in regard to the general health and welfare of the children.

The number of children attending the Board Schools in September 1897, before the extension of the City, was 18,077, and attending other schools was 21,868 ; or a total of 39,945. In 1898 the City was enlarged, and by the end of 1904 the total number of scholars attending the schools controlled by the Education Committee had risen to 64,570 :—

	No.	Accommodating.
Council Schools	43	38,837
Church of England Schools	42	21,985
Wesleyan School	1	743
Friends' School	1	683
Roman Catholic Schools	5	2,322
Totals	92	64,570

Many of the American, and some also of the Continental Cities have for some years made more or less complete arrangements for the systematic supervision of the health of the scholars, and quite lately the idea is developing in England.

London has now for some time had the services of a Medical Officer for the Education Authority, and is elaborating a somewhat comprehensive scheme for the inspection and control of schools.

In Blackburn, also, the Education Authority has appointed a Medical Officer, whose duties are defined thus:

1.—Supervision of the sanitary condition of school buildings.

2.—Supervision over all infectious diseases occurring in schools.

3.—Periodical visits to all the schools of the borough in connection with the two duties mentioned above.

4.—Examination of all school children referred by the School Attendance Officers as to their fitness, or otherwise, for school.

5.—Medical inspection of school children when possible, and where demanded through special circumstances.

6.—The examination of epileptic and mentally or physically defective children.

7.—The examination and certification of children who are deaf or blind.

8.—The examination and certification of children committed by the magistrates to an Industrial School.

9.—The preparation of monthly and special Reports, and attendance at Committee Meetings when desired.

This commendable practice is being adopted also in Leicester and other districts. Leicester is appointing a whole time Medical Officer at a commencing salary of £400.

Infant Departments.—I have also in previous reports called attention to the ill effects produced by the attendance at school of children under the age of 5 years, which is not only wasteful, but may prove directly injurious to the children's mental and physical condition, and which also causes a large loss of life, as infectious diseases such as Measles, Whooping Cough and Diphtheria are most prone to spread amongst, and are exceedingly fatal to, children at these early ages. In 1902, Measles alone caused 411 deaths, nearly all amongst children under 5.

The Liverpool City Council have under consideration an application for powers to prohibit the attendance at school of children under 5 years of age. The Education Committee of Sunderland have also agreed, on the recommendation of the Medical Officer of Health, and the Public Health Committee, to ask the Education Department for power to prohibit children from attending school under the age of five years.

It would not only be a wise measure from a health point of view, but would also save considerable pressure upon the rates, if a similar course were to be adopted in Bristol.

SCHOOLS.—H.D.

BRISTOL EDUCATION COMMITTEE.

Regulations as to Schools and Communicable Diseases.

INFECTIOUS FEVERS, ETC.

1. No Scholar, Teacher or other Officer of the Committee shall attend School while suffering from Smallpox, Scarlet Fever or Scarlatina, Typhoid (or Enteric) Fever, Diphtheria, Membranous Croup, or other notified disease; Whooping Cough, Chicken Pox, Measles, German Measles, Mumps, Ringworm, or Itch.

> "Sore Throat" should be carefully watched because it often betokens mild Diphtheria, or incipient Scarlet Fever.

2. No Scholar shall attend School from a house where there is, or has been recently, a case of Smallpox, Scarlet Fever or Scarlatina, Diphtheria, Membranous Croup, or other *notified* disease, until the clearance card (C.C.) has been received from the Medical Officer of Health.

3. No Scholar shall attend an *Infants'* School from a house where there is a case of Measles, German Measles, Whooping Cough, Chicken Pox, or Mumps: but Scholars in departments for older children *who have previously had the disease in question* need not be excluded.

4. Teachers or other Officers of the Committee living in infected houses should send written notice to the Medical Officer of Health, who will advise and decide as to the desirability of their continuance at School.

5. Every Head Teacher suspecting that any Scholar is suffering from a communicable disease mentioned in Regulation 1, or that any Scholar comes from an infected house, shall temporarily exclude the suspected scholar, and advise that private medical aid be at once sought.

In the case of Smallpox, Scarlet Fever, or Scarlatina, Typhoid (or Enteric) Fever, Diphtheria, Membranous Croup, not previously notified, and in every case of Whooping Cough, Chicken Pox, Measles, German Measles, Mumps, *immediate* notice should be sent to the Medical Officer of Health on the yellow card (H.D.).

Persistent Sore Throat should also be notified to the Medical Officer of Health.

6. In regard to cases visited at their homes, the Attendance Officer shall furnish the Medical Officer of Health with *immediate* notice of any case, or suspected case, of the diseases mentioned in Regulation 5, in respect of which the Attendance Officer has reason to suspect that information has not been already sent to the Medical Officer of Health.

The action to be taken in cases reported under Regulations 5 and 6, will be communicated by the Medical Officer of Health on the yellow card (H.D.) which will be returned to the Head Teacher, as quickly as the necessary investigation can be completed.

GUILDHALL, BRISTOL,
May, 1905.

The above Regulations have recently been adopted by the Bristol Education Committee, they are founded on the Brighton Regulations.

RETURN SHOWING CRÊCHES EXISTING IN BRISTOL. (1904).

Provision made by Municipality	None.		
Private Enterprise :—	Salvation Army, Rosemary Street.	Infant Day Nursery, Percy Street, Philip Street, Bedminster. (Sister Caroline of St. Agnes House of Charity supervises).	Dowry Parade Day Nursery.
Nature of Provision ...	Ordinary Dwelling-house, 4 rooms of good size. Diet varied :—Young Children : Milk and Bread chiefly. Older Children : Soups, Vegetables, a little meat.	Small house built for purpose, containing :—(1) Ground Floor : Parish Room and Offices. (2) Whole of Upper Storey used for Nursery ; large Play-room and Sleeping-room.	
How long Provision has existed	Opened 10 years ago.	36 years.	Existed 20 years ago. Closed 3 years ago, as the need formerly existing had ceased.
Particulars as to success ... Generally, with regard to its object, and financially.	Not self-supporting. Rent of house, rates, etc., met by grants from Headquarters and local subscriptions. Notwithstanding, Crêche is regarded as a success, and some of the parents are reached through the children.	Attendances, 5,433 last year (less than usual). Balance in Treasurer's hands, year ending July, 1903. £8 7s. 11d. Children come from 7 a.m. to 7 p.m., at 1d. a day, including food. (Cost, 3d. or 4d., which is made up by subscriptions). A success, much valued.	

The diminution in the need for Crêches may be due in large parts to the use made of the Council Schools Infant Departments for children under the age of 5 years. No useful educational result is likely to follow, and in many ways this is a very unsatisfactory, and often harmful, custom.

Housing of the Working Classes.

The following Table shows the action taken over a period of 15 years :—

Date.	No. of Houses dealt with.	No. of Houses closed.	No. of Houses made habitable.
1890	35	30	5
1891	72	27	45
1892	26	18	8
1893	2	0	2
1894	34	18	16
1895	31	18	13
1896	28	10	18
1897	4	3	1
1898	9	7	2
1899	33	31	2
1900	21	6	15
1901	6	1	5
1902	64	61	3
1903	67	58	9
1904	34	16	18
Total ...	466	304	162

Municipal Lodging House.

The Corporation has erected, on the recommendation of the Health Committee, a Lodging House for Casuals in Wade Street, to provide 120 beds, at a cost of over £7,000.

This Lodging House was opened on April 20th, 1905.

City and County of Bristol.

MORTUARIES.

Quakers' Friars, off Merchant Street, *Post-mortem* Examination Room and Coroner's Court adjoining.

Crew's Hole, St. George, near the Ferry.

In addition to the above, there are Mortuaries for Police purposes at Bedminster and Redland Police Stations; there was one at Trinity Road Police Station, but it is not now used in consequence of the close proximity of Merchant Street.

At Avonmouth arrangements have been made with Sir John Aird & Co., to use the Mortuary at their Private Hospital as a temporary arrangement.

THE MIDWIVES' ACT, 1902.

This Act, which came into force on 1st April, 1903, prescribes *inter alia*:—

1. That from and after the 1st April, 1905, it shall be an offence punishable by fine for any woman, who is not certified under the Act, to take or use the name or title of Midwife, or any name or title implying that she is certified under the Act.

2. That from and after the 1st April, 1910, no woman shall habitually and for gain act as a Midwife, otherwise than under the direction of a qualified medical practitioner, unless she is certified under this Act, under a fine of £10.

3. *Provision for existing Midwives.* Any woman who, within two years from the date of the Act coming into operation (April, 1903), claims to be certified under the Act, shall be so certified, provided she holds a Certificate in Midwifery from certain approved qualifying Bodies ; *or produces satisfactory evidence that at the passing of this Act she had been for at least one year in bonâ fide practice as a Midwife*, and bears a good character.

4. The Council of every County Borough is the Local Supervising Authority over Midwives ; and the Central Midwives' Board in London is the Central Supervising Authority, and have laid down Rules and Regulations for the execution of the Act.

The duty of the Local Supervising Authority includes general supervision over every Midwife practising within their area, including medical supervision of the appliances, methods and records, inspection of her place of residence, if necessary, and investigation of her mode of practice, as laid down by the Central Midwives' Board, suspension of Midwives from practice, if found necessary, to prevent the spread of infection, and other general registration and control.

At present, under the Notification Act, cases of Puerperal Fever are directly notified to the Medical Officer of Health, and all measures for preventing the spread of infection are naturally executed by the Health Department. The Regulations of the Central Midwives' Board (E. 5), prescribe that under this Act all disinfection and other precautions are to be done to the satisfaction of the Sanitary Authority ; and the same Board, in its suggestions to County and County Borough Councils, has assumed that the Health Committee would naturally form the nucleus of a Local Supervising Authority, with power to add to its number from outside the Council or otherwise.

The Council of the City of Bristol on 10th November, 1902, however, deputed the working of this Act to the Watch Committee.

There is of course no legal obstacle to the working of the Midwives' Act as a Police measure, and the medical assistance of the Divisional Surgeons can perhaps be arranged for on special terms. It is tc be hoped that the inconvenience of two Committees sharing part responsibility in the same work will, in the case of this Act, cause the minimum of inconvenience, and result in no preventable fatality. At present, your Committee will notice that no responsibility (beyond the exercise of your former duties under the Notification Act, the Public Health Act, and the Infectious Disease Prevention Act) attaches to you under the Midwives' Act, 1902.

Ambulance Service Available in the City of Bristol.

Property of	Address.	Telephone No.	Telegrams.	Class of Cases Removed.	Office Hours.	Method of obtaining Ambulance.
Corporation of Bristol...	40 Prince Street	789	Hygiene ...	Infectious ...	9.30-5 ... ... (except Sat. 9.30-1 ,, Sun. 12-1)	By Notification to the M.O.H.
Bristol City and Marine Ambulance Corps	20 Somerset Square, Redcliffe	12Y ... ... (calls by night)	Ambulance	All except Infectious Diseases	Day and Night ...	By communicating with the Hon. Sec., Capt. J. F. Trezise, 20 Somerset Sqr., Redcliffe.
Ditto ditto ...	Seamen's Institute, Prince Street	1228 ... ... (calls by day)	Ambulance	Ditto	Ditto	Ditto.
St. John Ambulance Brigade (City of Bristol Corps)	Sergt. Cotton, 100 Barton Hill Road	275Y (DrMather) 213Y (Secretary) 438x3, (Sergt. Cotton)	Cotton, Barton Hill Road.	Ditto	Sergt. Cotton, Day and Night Secretary's Office, 1 St. Stephen's Chambers. 9.30-5.	Ring up or Wire Sergt. Cotton
Ditto "Imperial" Section	Wills' Factory, East Street, Bedminster	1471	Wills, Bristol	Accidents ...	Summer ... 7-5 Winter ... 8-6	Telephone or Messenger.
*Bristol Police Establishment	Central Police Office ..	174	Police ...	Accidents ...	Day and Night ...	By communicating with Central Statn.
Bristol Tramway & Carriage Company	Brunswick Square Depot...	333	Cab (Brunswick Square)	Special Cab retained for Infectious Diseases	Ditto	Ring up or Wire.

*The Police Ambulance is very rarely used, as the Bristol City and Marine Ambulance Corps have three Ambulances available night and day for all cases except Infectious Diseases, and the S^t John Ambulance Brigade have one Ambulance which can always be had on application.

Vaccination.

The 1903 returns are the last complete ones available. I am indebted to the Clerk of the Bristol Union for the following information :—

	BRISTOL UNION.
Vaccination.	
Number successfully vaccinated up to 31st January, 1904	6,620
Insusceptible	33
Died unvaccinated	914
Postponed by Medical Certificate ...	273
Certificates of Conscientious Objection	212
Removed to Districts, the Vaccination Officer of which has been duly apprised	232
Cases left and not traceable	876
In abeyance	524
Births registered in 1903	9,684
*Percentage of successful vaccination to births	68·36

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*A special return of Certificates of successful primary vaccinations at all ages received in each of the calendar years 1900, 1901, 1902, 1903, and 1904, was furnished at the request of the Local Government Board, and showed as follows :—Certificates received in 1900, 5,917 ; in 1901, 5,776 ; in 1902, 6,898 ; in 1903, 6,972 ; and in 1904, 7,413.

Pauperism.

***Bristol Union.**—Summary of persons relieved on the following dates: the first-named date (1st April, 1898) being the date of the formation of the Union for the City and County of Bristol.

	1st April, 1898	1st April, 1899	1st April, 1900	1st April, 1901	1st April, 1902	1st April, 1903	1st April, 1904	1st April, 1905
In Workhouses and Children's Homes ...	...	2,281	2,305	2,408	2,355	2,388	2,513	2.578
In Institutions, &c. ...	114	116	127	127	148	155	149	159
In Lunatic Asylums ...	826	824	810	830	847	856	859	869
Out-Door Poor	7,796	6,409	5,847	5,837	5,845	5,829	6,030	6,425
	11,093	9,630	9,089	9,202	9,195	9,228	9,551	10,031
Weekly Cost of Out-Relief	£724 6 1	£683 14 11¾	£644 14 7	£662 18 4¾	£697 16 9½	£710 0 10½	£746 4 3½	£803 19 8

* The Union was much increased in area and population in October, 1904.

SPECIAL REPORT

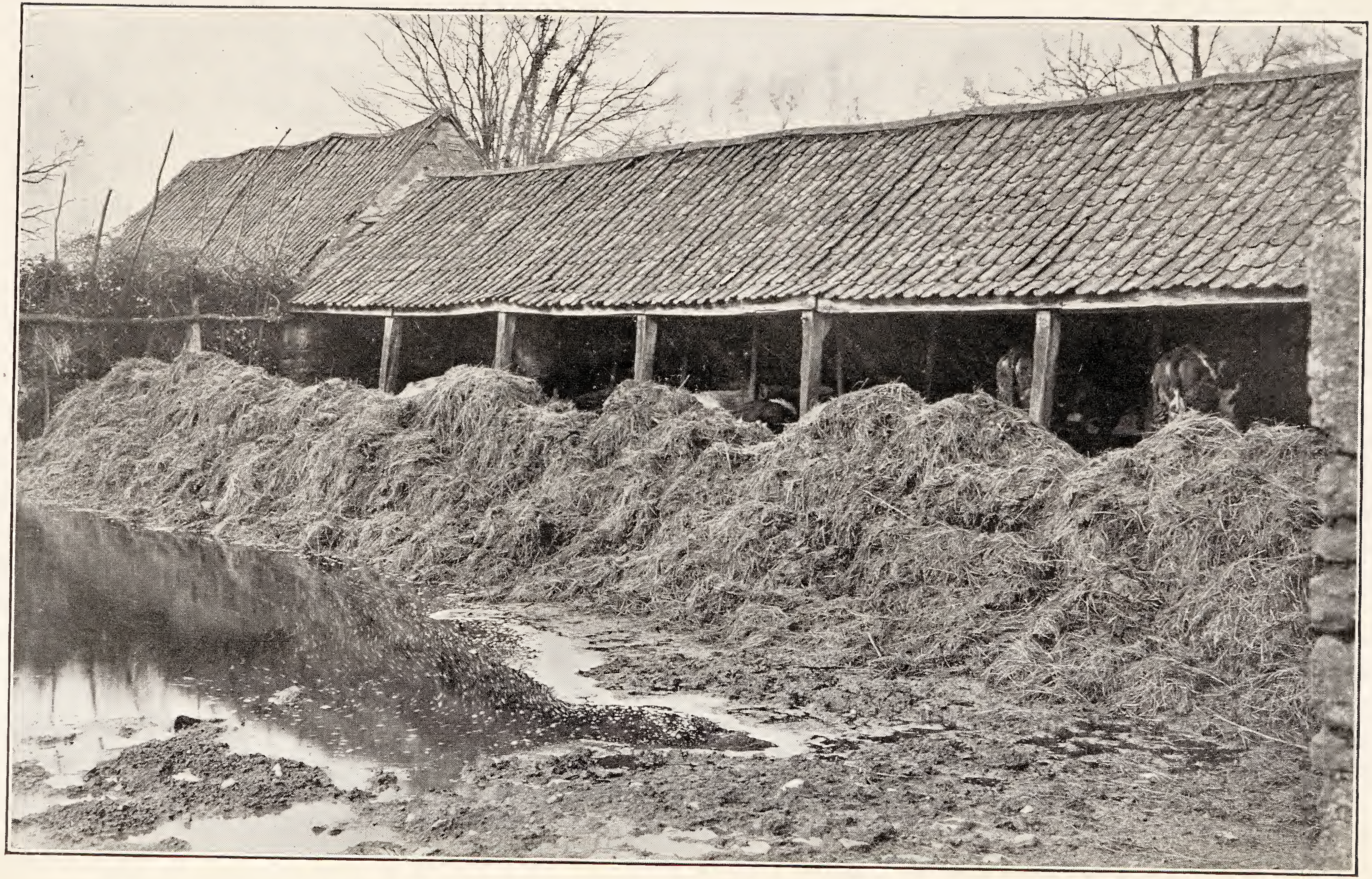
ON THE

FARMS, COWSHEDS, MILKSHOPS AND DAIRIES

ADDED TO THE CITY IN 1904.

FARMS AND COWSHEDS.

These are scattered widely over the added area, several of them lying almost on the boundaries at Avonmouth and Horfield, while in two cases the cowsheds are in the city while the farm houses are outside. This scattering of premises will render the maintenance of efficient inspection and control a difficult matter when considered in connection with the already very large area that has to be covered by the Dairy Inspector. The City since the last extension covers an area of rather over 26½ square miles, the distance as the crow flies across the city in one direction being 9 miles, and in the other direction 7 miles. The number of farms and cowsheds in the city previous to the last extension was 43, dairies and milkshops 1,000; the farms and cowsheds just added number 36, the dairies and milkshops 15; thus the total number of farms and cowsheds now to be supervised is 79, and of milkshops and dairies 1,015. Considering the above facts, I can only repeat with added emphasis what I stated in a previous special report on this matter made in 1900;—" In visiting these farms and cowsheds attention was drawn to the amount of ground which had to be covered. This is so great that it is impossible for one Inspector and a labourer to cover it on foot in order to visit these premises at least twice a week,



Farm No. 17.—Showing immense wall of manure just outside shed and a foul scummy pool of yard drainage and manure soakage; Cows milked in shed.

as should be done to see that reasonable cleanliness is continued. Surprise visits to farms and sheds cannot well be made, the premises have to be taken in rotation, and the occupiers knowing about the time when a visit is due can prepare accordingly. It would appear, therefore, that some quicker means of locomotion should be provided for the Inspector and man, with whose work, under present conditions, fault cannot reasonably be found." Trams and rail are of comparatively little use in visiting the more outlying parts, and it is in these that the farms chiefly lie. I think your Committee should give this question favourable consideration.

The 36 farms and cowsheds recently added, have all been visited and inspected in company with your Dairy Inspector. The number of cows accommodated therein was 565, the number on the various farms varying from a maximum of 60 to a minimum of 3.

Speaking generally, it may be said that in no instance were the conditions found entirely satisfactory or incapable of some, if not of great, improvement. The individual premises however, varied greatly in suitability and management, from some practically good to some absolutely bad, and the following classification expresses the condition of these farms and cowsheds at the time of first inspection :—Fit 1: Reasonably fit 12: Unfit 23: Total 36. Reproductions of photographs showing condition of some of the sheds and farms on first inspection are included in this report.

The defects found in connection with cowsheds were associated with the conditions of : —

1.—Structure
  - *a.* Material and structure of walls, roofs, and floors.
  - *b.* Drainage.
  - *c.* Provision for Lighting.
  - *d.* Provision for Ventilation.

2.—Management
  - *a.* Cleanliness of yards, sheds and cattle.
  - *b.* Provision for cleanliness of milk vessels.
  - *c.* Overcrowding of sheds.

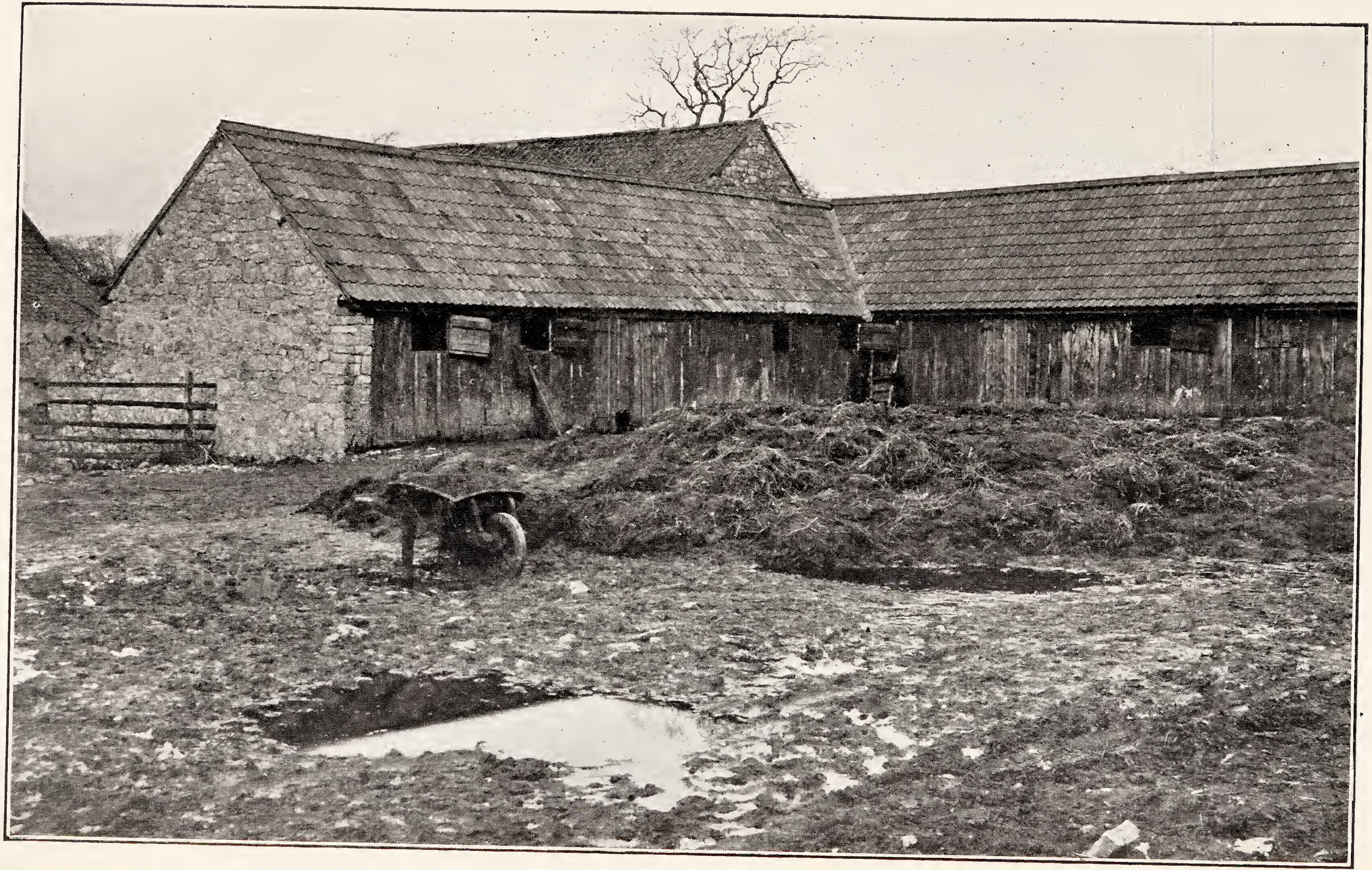
3.—Water Supply.

With regard to defects of Structure:—

A—Wood was very commonly found as a wall material, forming either the whole or part of the wall; it also appeared in some instances in the form of partitions reaching to within a short distance of the roof. The use of wood in cowsheds should be limited to the smallest possible amount, as it is absorbent, and quickly becomes foul and incapable of thorough cleansing. Where the walls were of stone the surface was generally very rough, forming a harbour of filth, and efficient cleansing was impossible. Brick walls, when unprotected, are equally objectionable for, though the surface is smoother, the bricks themselves absorb foul matter. Both stone and brick walls should be covered inside to a sufficient height with a smooth non-absorbent dado. This was, in one or two instances, partly done by coating the rough stone with a layer of pitch and paraffin 4 to 5 feet high. When properly applied this gives a smooth varnish-like surface, capable of cleansing, and is cheap and easily renewed,

The roofs were in most instances fairly good, being composed of tiles or slates; the tiles generally with open Joints, but in one or two instances the roof was ceiled under, and ventilation through the tile spaces prevented. In one or two cases lofts for hay, etc., formed of rough boards laid upon the roof-timbers, projected over part of the shed, interfering with the air-space. Corrugated iron was met with as a roof material, and also as a wall material in some places. As a roof it is objectionable, leading to rapid changes of temperature in the shed, and frequently collecting and condensing the moisture in the shed air so that it drops coldly on the cows' backs.

The floors varied in soundness and impermeability. They were commonly formed of brick, stone, rough cobble-work, or partly of brick and partly of stone or cobble. In many cases the joints were imperfect and permeable. In most a channel course of some sort was provided.



Farm No. 13.—Shows wooden-fronted sheds, also foul and uneven yard surface with large manure heap and foul pools.

B—Provision for drainage of the sheds varied from a good channel course discharging over an outside gully, whence a pipe drain was carried to the sewer, through various grades of more or less faulty arrangements down to simple drainage of the shed floor out on to the yard or field in front of the shed, or, as in one instance, to no drainage at all. At two farms the sheds and yard drained into a pond, close to the end of the sheds, from which an overflow was carried over the field beyond; these ponds were both disgustingly foul and offensive. In other instances, sheds, yard and house drains all emptied into stagnant rhines surrounding the farm buildings, rendering the water foul and offensive, and soaking the soil round the farm to the detriment of the water supply. Proper cesspools, receiving drainage of sheds and farm house, and furnished with a pump for removal of contents were in some cases met with.

C.—As regards lighting, the conditions varied greatly, as did the methods adopted. The use of glass tiles in the roof was a common method, and in a few instances windows in front, or hinged flaps were in use. Some of the sheds were far too dark and nowhere was the lighting incapable of improvement, save where the sheds were entirely open fronted.

D—Ventilation was in nearly every instance defective, some of the sheds were extremely hot and close, and in only a few was any provision made for top ventilation. In one case, the ridge tiles had been raised at intervals, yet, although there was no overcrowding, the sheds were some of the closest smelling. This method of top ventilation is not in my experience satisfactory, unless the whole of the top ridge is raised. In my opinion the best method of ventilation is by good sized louvred openings in the roof, or where light is also deficient, by louvred skylights; when reasonable care is used in fixing these the leaking from them, sometimes complained of, can be avoided.

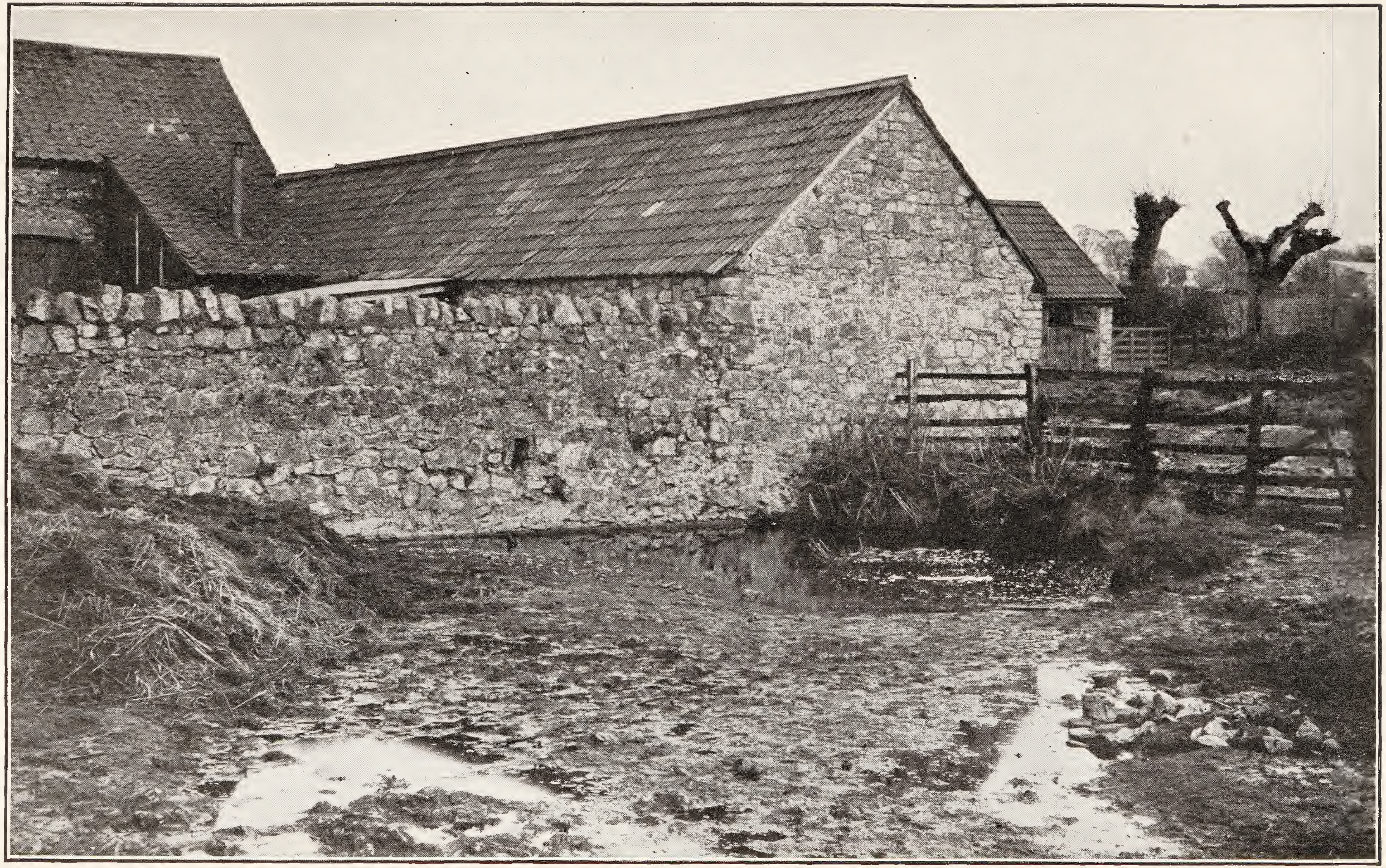
With regard to Management :—

A—It was the exception to find a yard reasonably clean and free from collection of manure. Some of them were extremely foul and immense collections of filth, and foul pools, were in close proximity to the sheds. The yard surfaces were in many cases very irregular, favoured the collection of filth, and rendered proper cleansing impossible. Far too little attention is paid to the condition of yard surfaces, and it was exceptional to find one paved or with a good surface; yet their condition has an important bearing on cleanliness. The state of sheds with respect to cleanliness was variable; in some it was evident that efforts had been made to keep them fairly clean, but the structural condition of walls and floors rendered real cleanliness practically impossible. In other instances cleanliness appeared to be a thing almost undreamt of, walls being plastered with filth and floors equally dirty, while in several sheds the roofs and rafters were decorated with the accumulated cobwebs of years hanging from them in funereal hued festoons.

Any attempt to groom the cattle and keep their quarters and udders clean was seldom apparent; it was common to find the quarters of the animals caked with dried dung and dirt.

B—At one farm only were the cans steamed by a special boiler and steam jets. The usual method of cleaning was by more or less boiling water obtained from a copper, the water frequently having to be carried some distance to the place were the tins were "scalded" (?) This "scalding" too was not unfrequently carried out on unpaved surfaces, and the tins after treatment were so stored as to be open to access of dust and dirt or in close proximity to yard gullies. In a few places the arrangements for keeping the tins were reasonably good.

C—In sixteen out of the thirty-six farms and cowsheds the latter were more or less overcrowded, the worst



Farm No. 13.—(Back of Sheds previous photo) showing foul and offensive pond at end of shed receiving all shed and yard drainage, also filthy condition of ground near pool.

instances were 20 cows kept where there was room for 11 ; 3 kept where there was room for 1 ; 8 where there was room for 4. The other cases, though not so glaring, were still sufficiently marked.

With regard to Water Supply :—

Eighteen farms and sheds had a supply from a Public Company, fifteen were supplied by wells, one by a spring pumped up to a cistern at the farm, and at one shed the only supply was rain water from the shed roof caught in wooden barrels, while at another there was no water at all. At one farm the well water is not used, being brackish, and a supply has to be carted from a neighbouring farm, the water of the wells at which is grossly polluted.

The water of the wells of 14 out of the 15 farms has been analysed, that at the 15th is obviously unfit and cannot be used. The results of the analyses are as follow :

Wells polluted with sewage	7
„ „ surface water ...	4
„ good	2
Spring good	1
	14

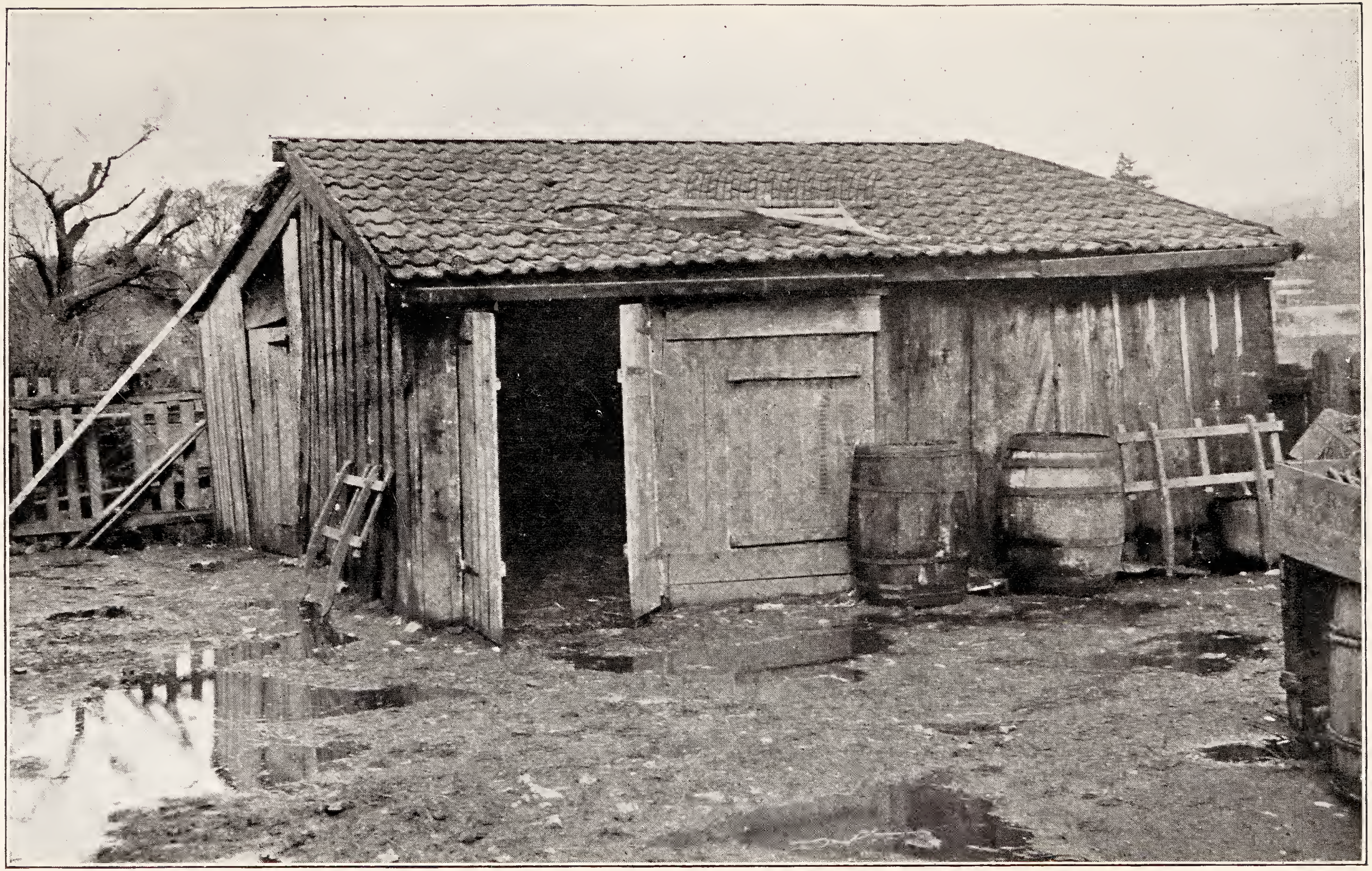
The condition of well waters disclosed by analysis is disquieting, especially as in some instances, where the water is worst, there is no other supply available save at very considerable expense. Every endeavour will be made to provide pure supplies in the place of those found polluted.

Where there is a Company's supply it is exceptional to find it laid on to the sheds ; this should in all cases be done, for a hosepipe attached to the tap in the shed enables thorough swilling of the shed floor and walls to be carried out daily with practically no trouble.

In some instances the water from which the cows drink is very unsatisfactory, being polluted with farm yard or other sewage.

From the above description of the conditions obtaining at these farms and cowsheds, it is obvious that an immense amount of work is required to put them into a reasonably good state for milk production. It is unfortunate that there seems to be no power to prohibit the use of a cowshed, into the construction of which material (such as wood) capable of absorbing foul matters enters largely, so long as the occupier attempts to keep the shed clean. It is also unfortunate that, in framing Regulations under the Dairies, Cowsheds and Milkshops Order, there is no power to prescribe what materials may or may not be used in constructing a new cowshed or dairy, nor the manner in which these materials may be used: for instance. wood, or other absorbent material, cannot be prohibited, nor if stone or brick be used, can it be required that the wall surface shall be smooth, even, or easily cleansed.

The production of another article of food, meat, is much more stringently supervised. No new slaughter-house can be occupied or used until it has been licensed by the Sanitary Authority who have the power of refusing the license unless the building structurally meets their approval. Control also over the proper conduct of the business is ensured by the fact that where Part III. of the Public Health Acts Amendment Act, 1900, has been adopted, licenses granted, after such adoption, for the use of places as slaughter-houses are to be in force for such time only, not being less than twelve months, as the Sanitary Authority may see fit to specify in their licenses; and under Sec. 30 of the same Act notice of change of occupation of a slaughter-house must be given in writing by the new occupier within one month. Further, and most important, under Sec. 31 of the same Act, a person convicted of selling or exposing or having in his possession, or on his premises, unsound meat, may have his license revoked by a Court of Summary



Farm No. 14.—Specimen of cow shanty; walls entirely of wood, drainage onto land at end of shed; overcrowded, no light or ventilation; foul pools in yard.

Jurisdiction. Similar powers cannot be exercised by a Sanitary Authority in the case of a farm or dairy; they must register anyone wishing to carry on the business no matter what condition the premises which he intends using may be in.

It is impossible to understand why the precautions considered necessary to guard the public from faulty production of meat should be so much more stringent than those imposed over the production of milk. As a matter of fact they should, if anything, be more stringent for milk, as may be gathered from the following comparison:—

MEAT.	***MILK.***
1.—Diseased meat reaches comparatively few persons.	1.—Contaminated milk reaches a very much larger number of persons.
2.—Persons eating much meat are on the whole of more mature age and less likely to be affected than those at earlier ages.	2.—The chief milk consumers are infants and young children who are specially susceptible to the effects of contamination.
3.—The diseases most likely to be caused by diseased meat are, Tuberculosis, Tapeworm and Trichinosis.	3.—Milk may also cause Tuberculosis, especially in infants and children. It often too is the cause of extensive outbreaks of the serious infectious diseases Typhoid, Scarlet Fever and Diphtheria, and when so infected reaches chiefly the young and most susceptible; and its contamination by certain germs is the cause of much of the fatal diarrhœa of infants.
4.—Tainted meat may cause diarrhœa and symptoms of ptomaine poisoning.	4.—Tainted milk may give rise to acute diarrhœa in infants.
5.—Meat is practically never eaten raw and thorough cooking probably destroys any harmful properties it may possess.	5.—Milk is commonly used unboiled, and therefore possibly in a dangerous condition.
6.—Beyond decomposition meat does not become contaminated readily, if at all.	6.—Milk readily picks up contamination from dirty hands, cans or sheds, or from polluted water or the air, and forms an excellent breeding and multiplying medium for harmful germs.

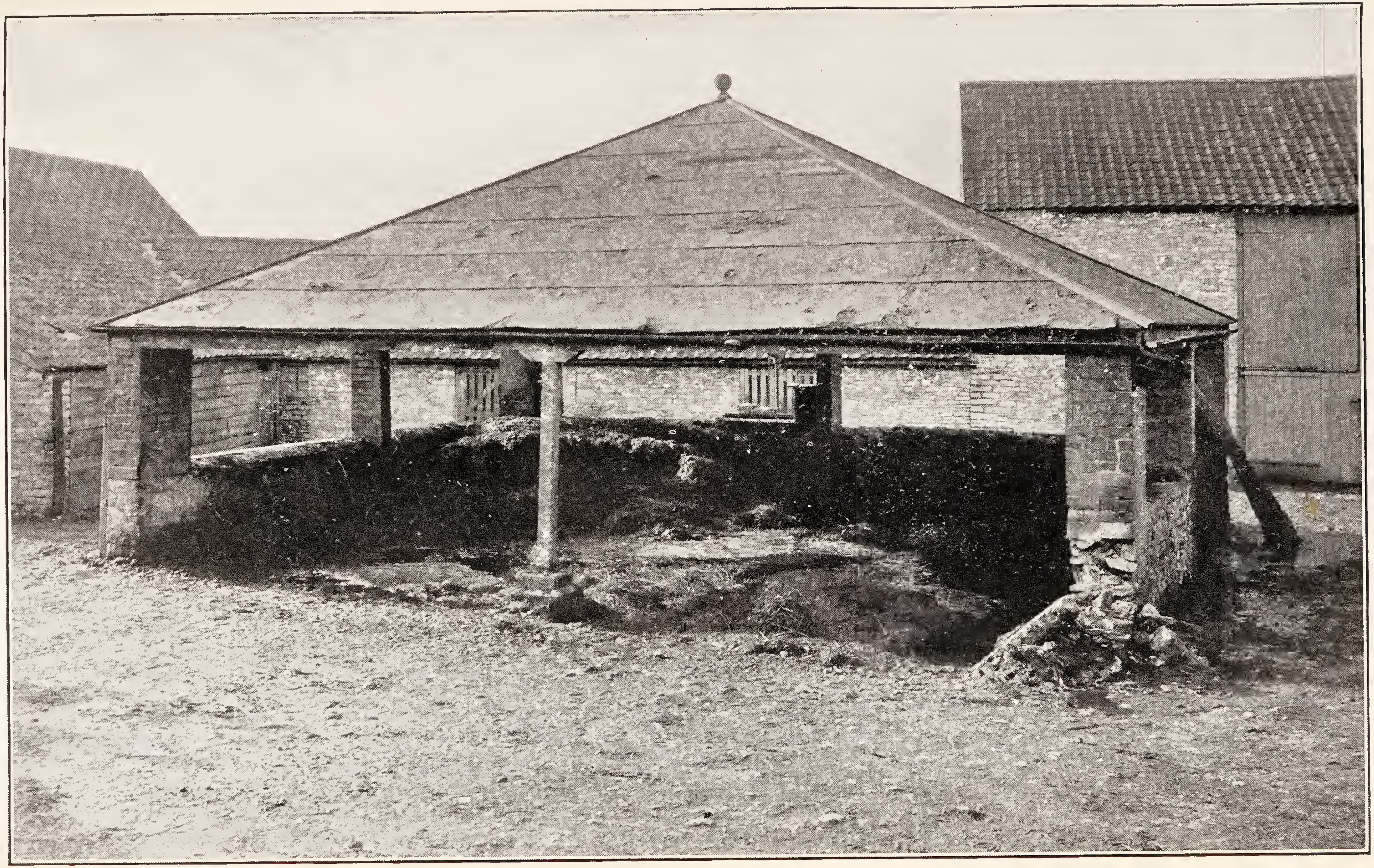
No one who has practical experience of the conditions attending the production, storage, and sale of milk can have any doubt that at least equal powers are necessary to guard milk production as meat production. Power should be given to license the *premises* for a limited period, not simply to register the producer or seller, and to refuse a license till the premises are rendered fit: to start with improperly constructed premises renders the all important matter of cleanliness practically impossible. The practice of placing a notice " Registered Dairy " over a dairy or milkshop is misleading to the public, as it implies that the premises are considered perfect for the purpose by the Sanitary Authority, whereas they have no control over them before they come into use. Conviction for a second infringement of the Dairies, Cowsheds and Milkshops Regulations in force within the district, or for selling or keeping contaminated milk should carry the contingent penalty of temporary or permanent revocation of the license. If such powers were granted, a very considerable step would have been made towards the protection of milk from contamination, and of the public from ill effects due to its consumption.

Dairies and Milkshops.

The dairies and milkshops, to the number of 15, in the recently added area were also visited. As regards fitness for the purpose intended, the conditions found may be summarised as follows :—

DAIRIES.		***MILKSHOPS.***	
Bad	1	Poor	1
Fair (save for drainage defects)	1	Fair (save for drainage defects)	2
Fair	5	Fair	4
Good	1		
	8		7

In most instances there was more or less direct connection between the dwelling-house and the shop or dairy, but not such as to be of any serious consequence. The other business carried on in the milkshops was not of



Farm No. 26.—Showing large roofed-in manure pit, said to be some feet deep, full of manure and foul fluid. It is impossible to probably empty this pit, fluid soaks from it into the ground and it is among and close to the cowsheds.

such a nature as to be likely to lead to contamination of the milk, and fair care seemed to be generally exercised over the cleansing and storing of milk vessels.

It is of course important that these retail distributing agencies should be properly conducted and looked after, but the importance of their condition and their power of contaminating milk almost sink into insignificance when compared with the often wretchedly faulty conditions pertaining to the production of milk on the farms from which they receive their supplies. There can be no doubt that the proper conduct of the farm or cowshed is of prime import in controlling the condition of a milk supply.

Appended to this report is a Table recording the conditions found on the 36 farms and cowsheds at the time of first inspection with a column showing the amendments actually completed or in progress up to date. This last column may, I think, be said to show a satisfactory amount of amendment secured in three months, and that the special inspection has already been productive of much good. It is satisfactory to state that in nearly every instance the owners of the properties have shown every disposition to meet the requirements suggested as necessary, so that where amendments have not so far been carried out there is every reason to believe that they will be. Still, as I have pointed out above, until power is given to license cowsheds, dairies, or milkshops, and to exercise control over their materials and construction any amendments made can, in many cases, result only in a partially satisfactory condition of premises.*

JOHN C. HEAVEN,
Assistant Medical Officer of Health.

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* Since writing the above I find that by Sec. 20 of the P.H. (Lond.) Act 1891 the use of any premises in London (outside the City) as a place for keeping Cows *without a license* is punishable by a penalty of £5, and that these licenses are renewable annually. The Regulations as to Dairies, Cowsheds, and Milkshops in force in the Metropolis contain certain requirements as to the structure of the floors and walls of Cowsheds and Dairies. Dairies and Milkshops need not apparently be licensed. This power to license should be extended to the country generally, and Dairies and Milkshops should be included.

FARMS and COWSHEDS (added area) 1904.

(The Terms Fit, Reasonably Fit, and Unfit refer to condition at time of first Inspection).

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No. of Cows.*	*Remarks.*	*Work done or in Hand.*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H. B L.*							
No. 1--Fit.	2	*Upper Shed.*—Stone walls, brick floor, in fair condition, drains by channel to yard gully outside. Tile roof.		15 x 13 x 36 7,020 cub. ft.	B.W. Co. Also pump for cleansing yard, &c.	House and upper shed by pipe drain to sewer: W.C. outside house, pan and trap flushed.	Generally fair.	Good tile floor. Through ventilation. Refrigerator in dairy. Drains to surface of yard over gully. Clean and light.	25	Tins kept in open under cover. Cans steamed by steam plant, arrangements for cleansing tins good. Farmyard in very fair and clean condition. Louvred skylights to large shed required and louvre in ridge of small shed.	Louvred ventilator fixed in shed No. 1 and light improved. Three louvred skylights fixed in No. 2. Limewashing done; Tar and paraffin dado in sheds; shed roofs free of cobwebs. Yard clean
		Lower Shed—Stone back and side walls, wood front, good brick channeled floor, drains by end to cesspool.	Light fair, ventilation defective.	8 x 16 x 66 8,448 cub. ft.		Lower shed and pigsties drain to cesspool at end of shed: pump to cesspool.					
No. 2–Unfit.	2	*Shed nearest house*, No. 1—Back wall stone, sides and front wood. Tile roof. Brick floor, in fair condition, no channel, sheds have to be brushed out. Divided by wood partitions into 4 stalls.	Light and ventilation defective.	8 x 11 x 38 3,344 cub. ft.	B.W. Co.	No. 2 shed to separate cesspool at end of shed, covered with galvanised iron roof: pump attached.	Fair.	Tile floor, drains to gully trap outside. Fairly light and clean.	8	Tins kept in dairy and scalded. Churns brought by dealer. Yard fairly clean. Wood partitions in shed should be removed. Louvred skylights required to both sheds. Shed No. 2 to be heightened. Owner says this shall be done.	Louvered ventilators fixed in roof of No. 1 shed, lighting improved; a sash window will also by fixed in the end of shed. Shed No. 2 will be abolished; plans for a new shed have been deposited. Limewashing done; tarred dado.
		Shed furthest from house, No. 2—Back and side walls stone; wood front. Tile roof. Brick floor (fair), channeled. Shed too low in front, to be heightened.	Light fair, ventilation defective.	7 x 14 x 50 4,900 cub. ft.		No. 1 shed, house and stable to another cesspool with pump.			14		
No. 3–Unfit.	1	Stone walls (rough), tile roof. Stone floor, not too good, channeled, drains to outside gully, fairly clean.	Both defective.	12 x 16 x 28 5,376 cub. ft.	B.W. Co.	Closet: brick trunk without trap ventilating cesspool. Cesspool to be properly covered & pump provided. Pigsties drain over the land close behind house: manure heap on same land.	Filth conditions abound in yard and round house.	None. Milk all sent on round.	7	Tins kept in open, scalded, copper for water in kitchen: not too well placed. Yard in bad condition and dirty. Land behind filth sodden. Pigsties against back wall of house to be removed. Condition generally bad.	Louvred skylight fixed in shed. Drainage entirely reconstructed, ventilated, and disconnected from new cesspool in field. Rain water excluded, goes to clinker bed. Stone from cesspool used to level yard. Limewashing and tarred dado done Much improved.
No. 4–Unfit.	1	Stone walls, tile roof, brick floor, sloped to channel and gully *in* shed.	Poor.	9 x 14 x 40 5,040 cub. ft.	B.W. Co.	House & shed drain by pipe drain to cesspool below yard. Pan and trap privy hand-flushed, ? disconnected. No means of emptying cesspool	Fair	No milk stored.	5	Tins kept in shed, near house, with brick floor draining to outside gully: not a very good situation for tins. Boiler in shed; tins scalded twice a day. Ventilating skylight required to shed: pump to cesspool. Premises not desirable.	Large louvred ventilator fixed in roof. Pump provided for cesspool. Limewashed.
No. 5–Reasonably Fit.	3	No. 1—Stone and brick walls, ceiled roof; stone floor (fair), channeled, with gratings at intervals in shed.		8 x 16 x 43 5,504 cub. ft.	B.W. Co.	Sheds and house drained by pipe drains to river Trym.	Sheds not too clean, much manure in yards.	No milk stored.	43	Tins kept in open; scalded twice a day, copper boiler for purpose. Ventilation and light wanted in all sheds. Yards to be cleaned up, and kept clean.	Two louvred ventilators fixed in roof of shed No. 1, lighting improved by glass tiles. Four louvred ventilators fixed in roof of sheds No. 2 and 3, lighting improved by glass tiles Manure shifted. Limewashing done.
		No. 2—Stone and brick walls, tile and slate roof, not ceiled; stone channeled floor (fair).	Poor.	8 x 21 x 60 10,080 cub. ft.							
		No. 3—Stone walls, tile and slate roof, not ceiled: stone floor (good), channeled to outside gully.		8 x 15 x 48 5,760 cub. ft.							

FARMS AND COWSHEDS (added area), 1904.—Continued.

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No of Cows.*	*Remarks.*	*Work done or in Hand*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H.B.L.*							
No. 6—Unfit.	1	Entirely of wood; galvanised iron roof; brick floor (fair), channelled to outside gullies; wood partitions in sheds.	Light fair, ventilation poor.	8 x 11 x 29 2,552 cub. ft.	No. 1—Pump in garden near shed for animals and swilling shed. No. 2—Well behind row of houses for washing tins, 27ft. from privy. Well No. 2, usable. Well No. 1, polluted	By pipe drain to sewer.	Fair.	None.	7	Tins cleansed in open in an unpaved yard close to defective gully, and stored in same place: copper for water. Sheds are not of proper material. Partitions to be removed and louvred skylights made. Yard to be paved for washing tins and gully repaired. Water to be analysed. Fairly conducted, but badly constructed.	Louvred skylights fixed: wood partitions lowered to 4ft. high. Limewashing done. Light improved. Yard where tins are washed paved and rest of yard in hand: new gully, trap fixed: soft water barrel abolished. Water No. 1 well, found polluted. Water No. 2 well, found usable. The Water Co., will extend main so that supply can be substituted for No. 1. and many houses also can be supplied.
No. 7—Unfit.	2 in one line.	No. 1, furthest from road. Rough stone back wall, wood front and sides; rough stone and brick floor, channelled to field in front. Tile roof dirty and cobwebbed. No. 2, nearest road. Rough stone back wall and one side wall, rest wood, tile roof, brick floor.	Light fair, ventilation bad. Light fair, ventilation bad.	8 x 14 x 41 4,592 cub. ft. 7 x 12 x 39 3,276 cub. ft.	Cows drink at river Trym. Well at house near Station for washing tins.	All the drainage runs over field in front of sheds; field is slightly hollow and forms a pool; whole surroundings filthy.	Sheds not too clean. Surroundings filthy.	None.	14	Sheds are really unfit. Tins said to be cleansed. Much manure close to sheds; ground round filth sodden. Floor of No. 1 shed in bad condition. Ventilation required to both sheds. Really unfit for use. Sample of water to be analysed.	Tiles cleaned of cobwebs: Limewashing done and tar dado made. Two louvre ventilators in roof of shed 1; skylight louvre ventilator fixed in Shed 2 and floor repaired. Drainage reconstructed and carried to proper cesspool with chain pump. Manure removed and ground surface near sheds much cleaner, partly owing to new drainage. Water analysed, result fairly good.
No. 8—Unfit.	1	Rough stone back and end walls, wood front. Floor brick and pitching in front, lime and earth near cribb, channelled.	Light fair, ventilation poor.	10 x 18 x 80 14,400 cub. ft.	Well in yard behind house; open to pollution? Water grossly polluted with sewage.	Sheds drain to cesspool in yard, overflow joins drain running through house yard, not far from well, and on to sewer in front. Choked privy for house.	Sheds and yards fairly clean.	Clean, light, and well ventilated. Stone floor in bad condition. Gully trap *in* dairy.	20 to 30	Ventilation required to shed. Water to be analysed. Whole drainage to be revised. Yard near house in bad condition. Tins kept in open, under cover, on good rack; yard near rack sodden with fluid. Boiler for scalding tins.	Three top louvre ventilators fixed in shed; limewashing done. Yard where tins are washed repaved with good cement floor; dairy floor and yard near repaved; gully in dairy abolished. Drainage entirely reconstructed, ventilated, disconnected from sewer, and with inspection chambers. Water of well found grossly polluted; Co.'s water put in.
No. 9—Unfit.	1	Two sheds near road. Brick and stone walls, tile roof; rough cobble floor, draining to yard in front. Loft over part of shed. Upper shed on lower side of yard. Rough stone walls, tile roof, defective stone floor, channelled. Lower shed lower side of yard. Stone walls, tile roof, bad stone floor.	Both bad. Both bad. Both bad.	7 x 13 x 16 1,456 cub. ft. 9 x 13 x 18 2,106 cub. ft. 8 x 16 x 19 2,432 cub. ft. 8 x 18 x 19 2,916 cub. ft	B. W. Co. Well in garden used for cows. Water of well grossly polluted with sewage.	Of sheds on to yard. No. 3 to foul pool at end of shed in garden. House drains to be tested.	Yard and sheds very dirty.	In house, stone floor & walls, drains on to gully outside. Light and ventilation defective.	20	Tins kept in open, but surroundings dirty; boiler for scalding. General conditions of sheds and yard very filthy. Sheds require light and ventilation and drainage. Foul drainage pool to be abolished. Premises quite unfit in present condition.	Shed 1—Loft removed; two top louvres fixed; light improved; limewashed and tar dado. Shed 2—Floor repaired; one top louvre fixed. Shed 3—Top louvre fixed. Drainage pool for sheds will be abolished, and proper cesspool in garden substituted. Yard cleaned and being levelled

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No. of Cows.*	*Remarks.*	*Work done or in Hand.*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H. B. L.*							
No. 10—Unfit.	1	Stone walls, tile roof; cobble floor not too good; no drainage. Loft over most of shed.	Both bad.	7 x 12 x 15 1,260 cub. ft.	B. W. Co. at house. No water to shed. Pond in field for cows.	On to field	Poor	In house at Shirehampton, little used, fairly clean; no milk stored.	3	Tins washed in back kitchen at house, and scalded from kitchen boiler. Shed requires ventilation and light; floor and drainage to be improved; loft over shed to be removed.	
No. 11—Unfit.	2	No. 1—Stone sides and back, wood front; cobble floor, draining to yard; tile roof. No. 2—Stone back, tile roof, open front; cobble floor, channeled to yard.	Poor.	62 x 16 x 10 9,920 cub. ft. 45 x 14 x 8 5,040 cub. ft.	B. W. Co.	House & yard drain to ditch at back of shed No. 1. Dairy and house yard drain to ditch in front of house, at side of high road.	Sheds and yard filthy. Yard paved with hard brick.	Stone floor, clean; attached to house. Drains to outside and on to ditch in front. Not used.	26	Tins kept in open yard. paved and draining to ditch in front. Ventilation required to sheds; floors to be removed. The back ditch is simply an open stinking cesspool; the front ditch also offensive. Sheds and yard filthy.	Sheds limewashed; tiles cleaned of cobwebs. Manure removed and yard clean. Ventilation to sheds, repairs to floor, and drainage will be seen to by owner.
No. 12—Unfit.	1	All wood walls, brick floor, drains to open ditch behind; tile roof.	Poor.	30 x 15 x 8 3,600 cub. ft.	Well in garden, about 40 feet from privy cesspool.	Cesspit privy for house. Shed drains to ditch.	Shed and yard fairly clean.	In house, not used.	8	Tins are sent for milk by the receiver. Drainage of shed should be taken out of ditch; ventilation and light required to shed; floor to be repaired.	Tiles cleaned, limewashing done; owner has promised to attend to light, ventilation and floor. Water of well found polluted; question of water supply under consideration.
No. 13—Unfit.	2	Sheds join at right angles forming two sides of square and lead into one another. Both sheds have stone back and side walls, wood fronts; tile roof. Stone cobble floors (fair) drain to open yard and on to a pond at end of shed.	Defective	54 x 16 x 8 6,912 cub. ft. 55 x 18 x 8 7,920 cub. ft.	Well close behind house.	House privy over catchpit. The sheds and yard drain to pool at end of cowshed, overflow from which runs over surface of field, towards river; pool foul and offensive.	Sheds not too clean. Manure accumulation in yard. and foul pools of soakage.	No dairy used.	28	Tins scalded daily and kept in open paved yard behind house; copper in yard for scalding. Sheds require better light and ventilation. Manure pool at end of shed to be abolished, and all drainage carried to proper cesspit and pump, overflow to be disposed of by sub-irrigation. Yard (farm) uneven and dirty.	Sheds limewashed: manure not shifted. Owner promises necessary ventilation, light and drainage amendments. Well water found fairly good.
No. 14—Unfit.	1	All walls wood, tile roof, rough stone floor, draining out at end of shed on to land.	Defective	18 x 13 x 8 1,872 cub. ft.	Well in open field well away from houses, at some distance. No supply near shed	House drains run to river Avon. Sheds and pigsties drain out into field, close to cowshed,	Dirty.	Dairy not too clean or well ventilated. Drains to sumpt pit in centre of floor, Not much used.	3	Tins kept in open yard at back of house, or in dairy; scalded. This yard requires repairing (foul pools about between stones); and drainage of premises should be put in order. Shed really unfit, light and ventilation required. Whole premises unfit in present condition.	Limewashing done. All necessary work in hand. Drainage nearly complete Water found good.

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No. of Cows.*	*Remarks.*	*Work done or in Hand.*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H. B. L.*							
No. 15—Unfit.	2	No. 1—Stone walls, tile roof ceiled, flat stone floor not channelled. No. 2—Stone walls, tile roof, brick floor channelled runs to yard surface.	Light fair in both sheds. Louvred openings at ends of long shed.	100 x 17 x 12 20,400 cub. ft. 42 x 9 x 18 6,804 cub. ft.	B. W. Co. Soft water cistern in yard of house.	Shed No. 1 drains to cesspool at end of shed, overflow to open ditch, which takes pigstye drainage. The ditch is a foul, stinking nuisance, and ultimately leads into ornamental ponds on adjoining property. Foul privy close to kitchen window, and pan privy at front of house, run to second cesspool in garden, overflow from which runs by another open ditch into cattle pond on adjoining property.	Sheds fairly clean- Farmyard dirty.	No milk stored.	30	Tins kept in open yard at back of house, steamed at Clifton. Paving of this yard very bad, to be renewed. Farmyard uneven, rough, hollow near shed, dirty, requires levelling and surface made good. Louvre ventilators required to both sheds. Whole drainage to be remodelled. Condition bad.	Limewashing done. Louvre ventilators fixed in roof (hardly large enough). Yard at back of house repaved. Owner promises attention to drainage. Yard being levelled and cleaner.
No. 16—Reasonably Fit	1	A temporary shed of wood, with good brick channel floor.	Fair.		Well in garden occasionally fails, about 40 feet from cesspit privy.	To field.	Clean.	Attached to house, stone floor, clean; light and ventilation good.	2	Tins cleansed in back kitchen and kept in dairy. Temporary premises, as land will probably shortly be used for building.	
No. 17—Unfit.	2	No. 1 Shed (in use)—Stone back and sides, tile roof, open front, rough stone floor drains to yard in front. No. 2 Shed (not now in use)—Stone walls, tile roof, stone floor (fair).	Fair.	80 x 16 x 8 10,240 cub. ft. 50 x 18 x 9 8,100 cub. ft.	Well under house, too salt to use. Water has to be carried from another farm where wells are also polluted.	Inner shed and yard, pigsties and house drain to rhine behind the shed; water is pumped from this rhine for cattle to drink.	Shed and farmyard dirty. Immense heap of manure and foul pool just outside shed.	At rear of house. Stone floor & walls; well lighted and ventilated; clean.	13	Tins kept in dairy; boiler close by. Premises unfit. No water supply; yards filthy; drainage arrangements very faulty.	Limewashing done. Manure removed; inner yard clean. Water supply under consideration.
No. 18—Reasonably Fit	1	Stone back wall, wood front and sides; galvanised roof, boarded inside. Pennant stone floor, with channel running to inside gully and on to sewer.	Light by front windows. Ventilation by 4 louvres. Both fair.	57 x 16 x 12 10,944 cub. ft.	B. W. Co. Tap in shed and to dairy.	Shed to sewer. Dairy discharges over outside channel, and on to sewer.	Shed fairly clean. Dairy clean. Ground in front of shed not too clean.	In field. Wooden structure; floor, cement and sand, good; light & ventilation good; clean.	11	Tins kept in open on rack by dairy; scalded; boiler by dairy. Ground under rack by dairy requires paving. Condition on whole fairly good.	Limewashing done. Manure removed.
No. 19—Reasonably Fit	1	Brick walls and floor in good condition; drainage to gullies in floor and out to front of shed. Tile roof.	Fair. Three roof ventilators.	66 x 13 x 9 7,722 cub. ft.	B. W. Co. No water in shed.	House drains to sewer; sheds also. Drains said to be disconnected.	Shed and yard and Dairy clean.	Connects with sitting room. Stone floor, without drainage. Light and ventilation fair. Seldom used. Lumber room over.	4	Tins scalded; boiler; kept in open; floor of place where tins are dealt with tiled. Good shed; yard in fair condition and fairly clean. Water required in shed Condition fair.	Limewashing done.

FARMS AND COWSHEDS (added area), 1904.—Continued.

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No of Cows.*	*Remarks.*	*Work done or in Hand*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H. B. L.*							
No. 20—Reasonably Fit	1	Stone walls, tile roof ; stone floor (in fair condition), with channel.	Light and ventilation fair.	16 x 18 x 9 2,592 cub. ft.	B. W. Co. No water in shed.	Shed drains to open ditch and, through opening in boundary wall, into culvert in road.	Fair.	None.	2	Tins kept in open : boiler in back kitchen. Yard in fair condition. Water required in shed. Fair.	Limewashing done.
No. 21—Unfit.	2	Shed No. 1 (next road)—Stone and brick walls, brick floor with channel. Tile roof. Shed No. 2—Rough stone walls, tile roof, good brick floor with channel.	Light and ventilation defective Light and ventilation defective.	52 x 11 x 7 4,004 cub. ft. 28 x 12 x 10 3,360 cub. ft.	B. W. Co. No water in sheds.	Sheds drain to cesspool with chain pump.		None.	14	Tins kept in open at back of house ; paving where they are kept defective ; boiler in back kitchen. Yard fairly clean. Shed No. 1 far too narrow and low : light and ventilation of both require amendment. Water required in sheds. When above is seen to, condition will be fair.	Arrangements pending with owners to abolish Shed No. 1, and enlarge Shed No. 2.
No. 22—Reasonably Fit	3	No. 1—Stone walls, brick floor with channel (good), tile roof (ceiled) ; fodder walk. No. 2—Similar to No. 1. No. 3—Stone walls, good brick floor with channel, tile roof, not ceiled ; fodder walk.	Light fair, ventilation by opposite windows, ridge ventilation useless. Ditto. Both fair.	80 x 17 x 12 16,320 cub. ft. 43 x 17 x 12 8,772 cub. ft. 80 x 15 x 10 12,000 cub. ft.	B. W. Co. Not in sheds.	Sheds drain to yard, and by open channels in yard to cesspool furnished with pump.	Sheds fairly clean. Yard dirty, large heap of manure and foul pool.	Clean, good tile floor ; light and ventilation good ; at back of house (not used).	60	Tins washed on tiled floor and kept in shed ; boiler for water. Sheds require louvre ventilators. General condition fair.	Top louvre ventilators fixed. Walls limewashed. Manure being shifted.
No. 23—Reasonably Fit	3	No. 1 (upper shed)—Stone walls, tile roof boarded under ; brick and cobble floor (not too good), with channel to gully in shed. Fodder walk. No. 2—Similar in structure ; in two tiers, loft over. No. 3—Stone back, wood front, tile roof, cobble floor (rough) ; wood partitions ; drains out over yard.	Light not good, 2 louvres in roof. Ditto. Light and ventilation poor.	28 x 21 x 12 7,056 cub. ft. 29 x 21 x 8 4,872 cub. ft. 34 x 15 x 9 4,590 cub. ft.	B. W. Co. Not in Sheds	Drainage to cesspool in field, with pump.	Sheds not too clean. Yard dirty : manure.	None.	23	Tins washed in clean outbuilding, away from yard, on good tile floor ; boiler and Co.'s water in shed ; building clean. Tins kept in foul yard, should be kept on rack just outside building where they are washed. Light and ventilation required for all three sheds. Cobble yard on great slope, uneven, dirty ; large manure heap. Condition poor.	Shed No. 1—Three large windows, to open, placed in back wall ; light and ventilation much improved. Shed No. 2—Large louvred skylight fixed, which also acts for Shed No. 3. Manure removed, yard clean. Limewashing done.
No. 24—Unfit.		No. 1 (small shed)—Stone back and sides, wood front. Tile roof, some glass tiles, cobwebs. Stone floor (bad), drains to yard in front. No. 2—Similar construction. No. 3—Stone and brick walls, good brick floor ; glass tiles in tile roof.	Light fair, ventilation bad. No ventilation. Ditto.	39 x 18 x 9 6,318 cub. ft. 55 x 15 x 9 7,425 cub. ft. 47 x 18 x 10 8,460 cub. ft.	B. W. Co. But not in Sheds.	All sheds drain to a cesspool, furnished with pump. House drains to sewer.	Fair.	In outhouse. Only used for tins. Stone floor to lip trap *in* dairy, clean.	21	Tins washed in dairy ; water brought from boiler in back kitchen across yard. Yard in front of No. 1 Shed very muddy ; requires cobbling. Ventilation wanted in all sheds, also water.	No. 1 Shed—Ridge tiles raised at intervals, but the openings are almost blocked by the wall ; 4-in. pipes through end wall of shed, near roof. Other sheds similarly dealt with ; there is evident down draught in No. 3, and the ventilation will probably not be found satisfactory. Tiles fairly cleared of cobwebs.

Number of Farm in Added Area.	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy.*	*No of Cows.*	*Remarks.*	*Work done or in Hand*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H.B.L.*							
No. 25—Unfit.	2	No. 1 (parallel to road)—Stone back and sides, wood front, tile roof ; brick floor, drains to channel in front of shed. No. 2—Brick and stone walls, tile roof (cobwebbed) ; brick floor.	Both bad. Ditto.	68 x 13 x 8 7,072 cub. ft. 25 x 15 x 10 3,570 cub. ft.	From spring in field, pumped to cistern at house.	Sheds drain to channel, in yard in front of sheds, which runs into large pond at end of Shed No. 2. This pond is foul and stinking ; overflow runs on to surface of field.	Sheds fairly clean, as to floors. Yard dirty, much manure.	Not used.	17	Tins scalded in open on paved surface near house ; boiler close by ; kept in open on paved surface. Yard hollow, bad, rough surface, not too clean. Yard requires attention. Ventilation and light required to sheds. Foul pond to be cleared by re-arranging drainage.	Three Top louvre ventilators fixed, as suggested ; lighting improved by glass tiles ; inside of roofs fairly cleared of cobwebs. Shed drainage altered to free pond, but pond has not yet been cleaned out. Limewashing done. Manure removed. Water found to be good.
No. 26—Unfit.	3	No. 1 (near house)—Stone back and sides, wood and stone front. Vitrified brick floor, drains to gully and on to cesspool. Fodder walk. Tile roof. No. 2 (in yard below)—Same construction. No. 3—Similar construction.	Light poor, ventilation fair, requires top ventilation. Ditto. Ditto.	42 x 16 x 10 6,720 cub. ft. 46 x 18 x 8 6,624 cub. ft. 54 x 19 x 7 7,182 cub. ft.	B.W.Co. But none in sheds.	All sheds drain to cesspool, in lower yard, furnished with pump.	Sheds fairly clean. Yard filthy.	Not used, except for tins. Stone floor ; Light & ventilation fair.	25	Tins washed on paved surface, boiler in back kitchen close by. Lower yard very uneven and dirty; all drains on to surface of ground under large open shed in centre of yard, with dwarf walls and roof over. Large heap of manure and much foul water in this shed. Manure shed (close to cowsheds) to be abolished : yard surface to be made good. Light and ventilation required to all sheds, Condition bad.	Owner has promised to carry out requirements. Limewashing done. Manure shed in yard cleaned out.
No. 27—Unfit.	1	Stone walls ; tile roof, felted under ; brick floor, in bad condition ; no drainage. Fairly clean, save for fluid collecting in corner.	Fair.	34 x 17 x 11 6,358 cub. ft.	Draw well, close to earth closet.	None.	Shed fairly clean, save for drainage.	None.	4	Tins cleansed at shop. Drainage required for shed. Yard in poor condition. Well was condemned by Horfield U.S.A., has been opened, and is now used. Proper water required. Many pigsties close to shed. Unfit till proper water is provided.	Order to close well obtained. Limewashing done.
No. 28—Reasonably Fit	1	Stone back, wood side and front walls. Tile roof. Floor good, brick and cement, channel to gully outside.	Fair.	42 x 12 x 6 3,024 cub. ft.	Co.'s water, but not in shed.	Shed drains by separate drain to a brook some distance off. House and dairy go to cesspool, with overflow to small stream.	Shed clean. Yard fairly clean as to manure.	At side of house, clean. Defective stone floor drains to lip trap in dairy.	6	Tins scalded in house, kept in dairy. Yard surface uneven, in bad condition. Condition fair.	Limewashing done. Manure removed.
No. 29—Unfit.	3	No. 1 (on left of yard)—Stone sides and back, wood front. Brick floor in fair condition, with channel. Slate and tile roof. Nos. 2 and 3 Sheds—Similar in construction.	Poor.	25 x 14 x 8 2,800 cub. ft. 33 x 16 x 9 4,752 cub. ft. 39 x 16 x 9 5,616 cub. ft.	Well behind shed. Sample required.	Sheds all drain over field. House privy open cesspit.	Sheds moderately clean. Yard foul : much manure.	None.	21	Tins kept and washed in open, on paved surface near house, not far from open cesspit ; boiler close by. Ventilation and light required for all sheds. Shed drainage to be taken to proper cesspool with pump. Privy to be reconstructed, and open cesspit abolished. Yard wants levelling and cleansing.	Shed No. 1 will be rebuilt, widened and lengthened. Three top louvred ventilators fixed in sheds Nos. 2 & 3, and light improved by glass tiles. Proper dry earth privy constructed, and cesspool abolished. Well water found contaminated ; well to be closed. Co.'s water brought to field some way from house, has to be fetched. Manure removed. Limewashing done.

Number of Farm in Added Area	*Sheds.*				*Water.*	*Drainage.*	*Cleanliness.*	*Dairy*	*No of Cows.*	*Remarks*	*Work done or in Hand*
	No.	*Structural Condition.*	*Light and Ventilation.*	*Dimensions. H. B. L.*							
No. 30—Unfit.	2	No. 1—Entirely of galvanised iron. Good stone floor, channel to field by shed. No. 2–Stone and brick back; sides front and roof, galvanised iron; good brick floor, with channel to field. In bad repair; too low.	Light and ventilation fair, end louvres closed. Light and ventilation defective.	27 x 14 x 9 2,502 cub. ft. 19 x 12 x 6 1,368 cub. ft.	Rain-water. Caught in old butts.	Drain to field close to sheds.	Sheds not too clean. Field round sheds very dirty.	None.	3	Tins washed at Farm, or dairyman's house. These sheds are unfit. Is giving up keeping milking cows shortly.	
No. 31—Unfit.	1	Stone back and sides, wood front; brick and stone floor, good, with channel. Tile roof.	Both poor.	86 x 16 x 10 13,760 cub. ft.	Two Wells. Pump of one well in shed.	Sheds and house to large cesspool with overflow to rhine; no pump.	Shed fairly clean. Yards dirty.	Stone floor; clean, light; ventilation fair.	18	Tins washed in open, on paved surface, and kept in dairy or open. Light and ventilation required to shed. Cleanliness to be enforced. Samples of water required.	Limewashing poorly done; cobwebs partly removed from tiles; manure shifted. Both waters polluted: question of supply under consideration; other requirements held over pending decision.
No. 32—Reasonably Fit	2	No. 1–Stone back and sides, stone and wood front; brick and stone floor, good; tile roof. Drains by channel to gullies in shed. No. 2—Stone walls, wood doors in front. Tile roof; good brick floor to gully in shed.	Light & ventilation poor, 2 small louvres in roof not sufficient. Light and ventilation poor.	45 x 15 x 9 6,075 cub. ft. 16 x 11 x 10 1,760 cub. ft.	Well in field near house, often dry. Spring in field near Trym, about 150 or 200 yards from farm. Cows drink at Trym.	Sheds drain by 6 in. pipe over orchard on hill side. House to hill side by separate drain.	Sheds and yard clean.	No dairy.	16	Tins kept in the open, washed at house, and scalded at customers' dairies, Bristol. In fair condition. Sheds require more light and ventilation. Water supply required.	Two top louvred skylights fixed in No. 1 Shed; one ditto in No. 2 Shed. Sheds cleansed and limewashed. Water supply under consideration: Well water receives surface drainage.
No. 33—Unfit.	2	No. 1—Wood and stone walls, good brick floor, tile roof. No. 2–Same construction. The two sheds are under the same roof.	Light and ventilation fair, end ventilation.	39 x 29 x 11 12,441 cub. ft. 39 x 13 x 7 3,549 cub. ft.	Co.'s Water. Taps in sheds.	Sheds drain by channels to gullies in shed, and on by pipedrains to sewer	Sheds and yard clean.	No dairy.	10	Tins washed in a shed and kept on stone floor of scullery. Condition fair.	Limewashing done.
No. 34—Reasonably Fit	1	Stone back, wood sides and front; Stone and vitrified brick floor, with channel, in good condition. Tile roof.	Both bad.	34 x 15 x 7 3,570 cub. ft.	Well, supplied by spring above shed.	To surface of yard, and then to lane by entrance gate.	Shed smells foul, though looking clean, Yard fairly clean, save for drainage.	None.	3	Tins cleaned in back kitchen: boiler. Condition poor. Cleanliness, light and ventilation required.	Louvred skylight fixed in shed: shed floor repaired: limewashing done. Proper dry privy erected and cesspool abolished.
No. 35—Reasonably Fit	1	Stone and wood walls, tile roof; brick floor (good), with channel to gully in shed.	Both poor.	16 x 13 x 8 1,664 cub. ft.	Well, in garden behind house, close to pigsties. No supply to shed.	To cesspit; drain disconnected, ventilated, and with pump.	Shed fairly clean. Yard fair.	None.	3	Tins cleansed at shop and sometimes at house. Yard partly bricked over. Light and ventilation to sheds required. Water to be analysed. Slaughter house, apparently fairly conducted, about four yards from cowshed; and piggeries not much further off. Combination of business not desirable.	Limewashing done. Well water proved polluted. Co.'s water put in.
No. 36—Reasonably Fit	2	No. 1—Brick walls, sides and back: front, brick piers filled in with wood and galvanised iron; tile roof; cobble floor in bad condition. No. 2—Stone back and one end; brick piers, with wood and iron between, at front and other end; very good brick floor and channel.	Light fair, ventilation defective. Both fair.	32 x 14 x 10 4,480 cub. ft. 39 x 16 x 9 5,616 cub. ft.	Well, in back yard near house, 25 feet deep. Cover stones defective; slop nuisance close by, and yard surface near pervious.	Sheds drain by pipes to cesspool, in field behind, emptied by hand. House to separate cesspit. Both pits some distance from well.	Sheds clean. Yard clean.	None.	18	Tins washed and kept in open in back yard, near well and slop nuisance; boiler in back kitchen close by. Back yard near well to be properly paved, and drains seen to. Ventilation to sheds requires attention. Shed No. 1 floor should be relaid: advised to discontinue this shed and use instead a building in continuation of Shed 2, where proper floor should be made, and ventilation and light could be provided. Cattle well groomed and quarters clean (exceptional condition).	Yard behind house being levelled and paved with hard brick, and yard drains in reconstruction; well being protected with cement. Floor and channel of No. 1 Shed improved; shed drainage amended. Owner will provide required ventilation. Well water found good.

GENERAL & VITAL STATISTICS.

Population.

	Area in Acres	Population (Estimated)	Rateable Value
City of Bristol, 1897	4,661	232,242	£1,153,311
Additions of 1897	6,756	85,800	£246,815
Additions of 1904	5,347	13,443	£69,560
Estimated increase since 1897 ...	...	22,958	
City of Bristol, 1904	17,004	354,443	£1,723,119

This table shows that the City covers not quite four times the acreage which it covered in 1897, and has had added to its population a fresh population of 122,201 persons; an added city larger than Preston or Southampton. The City Medical Officer of Health has assumed the duties and responsibilities of the Medical Officers of Health of this added city; considerable economy has thus been effected in the medical administration, as the salaries of the various medical officers have lapsed.

Births.

The births registered in Bristol in 1904 were 9,135, of which 281 were returned as illegitimate, a percentage of 3·0.

63 Births were registered in Westbury-on-Trym Registration Sub-District during the last quarter of the year, giving an annual birth rate of 18·7.

The birth rate for the year was 26·6, a decrease on the rate of last year, which was 27·2; the rate has since 1881 shown an almost continuous decrease. (Table B). The rate for the 76 great towns in 1904 is 29·1.

The excess of births over deaths during the year 1904 *(natural increase of population)* is 3,788. The estimated *actual increase* from 1903 to 1904 is 4,309.

Marriages.

2,894 Marriages took place within the Borough of Bristol during 1904. The annual marriage rate per 1,000 living is thus 8·4 compared with 8·0, the rate of last year. The area from which marriages are returned now coincides with the Borough of Bristol.

Deaths.

5,347 Deaths were registered in the district during the 52 weeks ending the 31st December, 1904, of which 85 or 1·5 per cent. were returned as deaths of illegitimate children. The recorded general death rate for the year, uncorrected for age and sex distribution, is 15·58 per 1,000 living, compared with a rate of 14·22 for the year 1903. The death rate recorded for the 76 large towns in 1904 is 17·2.

41 Deaths were registered in Westbury-on-Trym Registration Sub-District during the last quarter of the year, giving an annual death rate of 12·1.

Infant Mortality.

Of the 5,347 Deaths, 1,222 were of infants under one year. The proportion of these deaths to every 1,000 births (infant mortality) was 133·7, compared with the unusually low rate—116·3—returned last year. The rate recorded in the 76 large towns is 160.

9 Deaths of infants under one year were registered in Westbury-on-Trym Registration Sub-District during the last quarter of the year, giving an Infantile Mortality rate of 142·8.

The Infantile Mortality rate varied thus :—

St. Paul and St. Augustine ..	156·6
St. George	153·4
St. Philip	153·0
Redcliff	141·7
Knowle	124·5
Bedminster	121·3
Stapleton	107·8
Clifton	98·8
Ashley	83·8
Westbury-on-Trym	142·8

In Table B will be seen the annual infantile mortality rates in Bristol for the past 25 years.

Seven Chief Epidemic Diseases

(Zymotic Rate).

The rate of mortality from the seven chief epidemic diseases, viz., Small-pox, Measles, Scarlet Fever, Whooping Cough, Diphtheria, Fever (Typhus, Enteric, and Simple continued Fever or Pyrexia), and Diarrhœa was, in 1904, 1·6 per 1,000 living, compared with a rate of 1·1 in 1903. The rate recorded for the 76 great towns in 1904 is 2·4.

Annual Rate per 1,000 living.

	Births.	Deaths.	Principal Epidemic Diseases. Cols. 4—10.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhœa.	Deaths under one year to 1,000 Births.
Cols. ...	1	2	3	4	5	6	7	8	9	10	11
England and Wales	27·9	16·2	1·94	0·01	0·36	0·11	0·17	0·34	0·09	0·86	146
76 Great Towns ...	29·1	17·2	2·49	0·01	0·47	0·12	0·19	0·40	0·10	1·20	160
142 Smaller Towns	27·5	15·6	2·03	0·03	0·36	0·13	0·16	0.35	0·10	0·90	154
England and Wales less the 218 Towns	26·7	15·3	1·28	0·01	0·23	0·09	0·14	0·27	0·08	0·46	129
Bristol	**26·7**	**15·6**	**1·64**	**0·00**	**0·30**	**0·11**	**0·30**	**0·34**	**0·08**	**0·51**	**134**

Mortality at Ages between 1 and 65.

2,739 Deaths were returned, corresponding to an annual rate of mortality per 1,000 living, between these ages, of 7·9, compared with a rate of 7·5 in 1903, and 9·9 in 1902. The new tables of the Local Government Board group the ages 1—65, which are no longer comparable with the age grouping 1—60, adopted by the Registrar-General for the large towns.

Mortality amongst Aged People.

1,386 Deaths of persons aged 65 and upwards were registered, whose ages averaged 75 years and 3 months. The rate of mortality amongst persons living at these ages was in Bristol 147·2, compared with 128·0 in 1903, and 88·1 in 1902.

Prevalence of Sickness in 1904.

Small-pox.

The prevalence and fatality of this disease is here shown for the past 15 years :—

SMALL-POX.

Year.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per cent.
1890	0	—	0	—	—
1891	16	7	1	0·4	6·2
1892	0	—	0	—	—
1893	165	73	20	8	12·1
1894	201	88	16	7	7·9
1895	4	1	0	—	—
1896	42	18	5	2	11·9
1897	10	4	1	0·4	10
1898*	2	0·6	0	—	—
1899	0	—	0	—	—
1900	0	—	0	—	—
1901	1	0·3	0	—	—
1902	4	1	2	0·6	50
1903	46	14	3	0·8	6·5
1904*	34	9	1	0·2	2·9

* City Extended.

It becomes at once evident from this Table that, since notification began (1889-90), Small-pox has only once (1893-4) assumed epidemic proportions ; in every other year when the disease was brought to the City, the cases have either been limited to those actually introduced, or spread has been successfully limited to the primary offshoots of the introduced case or cases.

Small-pox in Bristol in 1904.

As in the previous year, Small-pox was introduced upon several occasions, and into various parts of the district; and, being in one or two instances, overlooked, commenced to spread pretty freely until it became known to the Health Department; whereupon, in every instance, the threads of distribution were gathered up, and the further spread of the disease was effectually controlled

Small-pox did not threaten the district before April 2nd, on which date a tramp (J. F.) hailing from Newcastle, developed the disease at Keynsham, and was isolated for the Keynsham Rural District Council on the Ship Hospital, where he died on April 10th.

On April 9th, another Tramp (C. H.) was admitted to Shepton Mallet Workhouse Hospital, suffering from Small-pox.

Both these men had passed through the Bristol Common Lodging Houses during the incubation stage of their disease, but, so far as could be ascertained, no harm resulted. After considerable experience of this disease, I have formed the opinion that very little risk of spread exists, except from intimate contact, before the appearance of the papular rash.

The first introduction and development of the disease in the City proper was in the person of a Dock Labourer at Avonmouth, who sickened on May 9th; he had recently come from some railway works at Didbrook, in Gloucestershire. He was isolated on the Hospital Ship, and recovered.

But it was not until the middle of May that a really effective introduction of smallpox into the city took place, in such manner that when it came to light, three separate centres involving 12 cases had already occurred, and the makings of a widespread epidemic were in train, had not each of the scattered threads been traced, and the cases picked out and isolated. This investigation, which led beyond the city bounds, proved most interesting, and was entirely successful. This was not a "tramp" introduction, but was brought by a bonâ fide working-class family, and, as in 1903, this form of introduction proved most effective. No special "tramp" legislation would in any way affect this class of introduction. "Tramp" introductions have proved comparatively simple of late years, probably owing to Inspector Dimond's alertness, but there are always possibilities of trouble in the Common Lodging Houses.

The history of this introduction runs thus:—On May 18th Dr. Leonard reported three cases of small-pox in the same house, in Bedminster, a father and two sons, W.W., G.W., and W.W. junr., who had sickened simultaneously on 14th May. On enquiry it appeared that on the 17th of March a family of 9 persons (the B. family) had come to stay at this house, in search of work at Avonmouth; some of them had been noticed to have "spots" about them, but were not seriously ill. They came also from the Railway works at Didbrook, where they kept a lodging house; this fact was at once suggestive. The whole family had left about 14th May for an unknown address, probably at Shirehampton. At that time Shirehampton was still in the Barton Regis Rural District, and we had no business to interfere, but it seemed expedient to follow up the cases personally, so as to furnish definite in place of vague information to the local Authority of cases which, having passed through Bristol, would undoubtedly be credited to the City.* On arrival at Shirehampton station, we found from the local carrier that he had lately moved in some furniture for a family to a given address. Here we found four undoubted, but remarkably mild cases at breakfast, and learnt that three of the sons were at work on the Dock; and, incidentally, the mother remarked that her little girl had been staying with a married daughter two streets off. This address was accordingly visited and yielded four more cases. We then caught the Avonmouth train for the Dock, where Dr. Rolfe kindly had the three brothers in from the works, one of whom was obviously affected, and the two others sickening. We had now picked up each thread of communication; nine of the cases were handed over to Barton Regis for isolation, we dealt with the others, and this part of the introduction, which had begun to ramify so well, was at an end. Only one case died, an unvaccinated baby in the house which the little girl visited.

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*This duly happened in the next report of the M.O.H. for the district.

The cases were as a rule most remarkably mild, a source of very considerable danger, as such cases are very often "missed," and so lead to wide extension. Fortunately smallpox is an absolutely straightforward disease, and a patient either has it or has it not, he never merely *carries* it, as in Diphtheria; hence personal enquiry, armed with the two simple requisites, a working knowledge of the disease in its varying forms, and a close acquaintance with its habits of spread, will *generally* result in suppressing the beginning of an outbreak. But the searching must be personal and thorough.

Some further trouble resulted from the infected house in Bedminster. On June 11th, an unvaccinated baby (Baby C.) in Bedminster was notified as having Small-pox. As the interval from the removal of the cases from the first invaded house on 18th May to June 11th, is exactly 24 or twice 12 days—*i.e.* a double incubation period of Small-pox, and and as the family knew the previous one, we inferred a "missed" case, and with the consent of the Medical attendent, visited the house to examine the inmates: the case was at once found, the mother (Mrs. C.) had a very mild, but quite definite, attack having sickened about May 30th, and was taken to hospital, with the baby: this house subsequently yielded two other cases on June 13th and 16th: this was all, and Bedminster was again free of Small-pox.

Only one other "sporadic" case can reasonably be ascribed to this introduction. On May 24th. W. H., a

Cornporter, living in Castle Precincts, sickened; the husband of Mrs. C., was a cornporter and though infection from this source cannot be proved, it is permissible to assume that it was possible. No other case resulted from this one.

The B. introduction, beginning with seven un-noted cases, is thus seen to have resulted in only 12 others before complete extinction, a remarkably small number in a disease which will readily multiply six-fold. Every fresh centre was fortunately known to us in time to take the secondary diffusion period under our care; under such circumstances, for the past 10 years experience has shown that control may be effectual; this continued success is not, however, in every way, good for the City, as success in preventive medicine largely depends upon personal effort, which does not provide hospital accommodation; and too great reliance upon past success may spell disaster in the future. Thus too great success in real *preventive* work is penalised, the apparently ridiculous ease with which success is attained, being taken as the measure of the disaster averted. The Small-pox Isolation accommodation at Novers Hill, (35 beds at full cubic space) is most inadequate for the size of the City, 358,000; no additions have been made for 10 years, though the City has increased since that time by 122,000 persons, who are totally unprovided for, should any failure in the personal prevention of the spread of Small-pox unfortunately occur.

While this outbreak was in progress, a tramp P. F. (1305) arrived on May 27th, with the eruption of Small-pox just appearing, and slept that evening in a room at a Common Lodging House with 20 others. He was moved to Hospital, while the others, as usual, scattered. Nothing happened amongst the inmates of the Common Lodging House who remained, but spread occurred from this case in two directions, one into the City, the other out to Kingswood.

The Bristol case, a boy who lived at home, but being somewhat vagrant, had used the Common Lodging House on May 27th, duly sickened on June 9-10th, but the case was "missed" by the doctor attending him, until June 16th, when he was notified. This delay gave opportunity for further infection at home. Accordingly on June 25th, a sister, and on June 28th, a brother sickened. The rest of the family were reported as well, the mother was near her confinement, and on June 28th, I learnt upon enquiry, that 2 nurses and a doctor were in expectant attendance upon well-marked labour pains. I did not intrude, beyond making daily enquiry, until July 1st, when hearing that the pains were much relieved, and yet no birth, and knowing also that the pseudo pains had coincided with a fully due incubation period of Small-pox, I visited the case and found, as I had anticipated, for the circumstances were almost diagnostic, a most satisfactory discrete eruption of Small-pox on her face.

The case was duly removed to Hospital, and the baby, born a week later in the Ward, was vaccinated at once. Mother and child left the Hospital in good health.

The second extension from the Common Lodging House was to Kingswood:—

There were four Kingswood cases: (Dr. Perrott kindly supplied particulars):—

1.—A man (C. S.) slept in same Lodging House as P. F. (1305) on May 27th, developed Small-pox about June 11th.

2.—Wife of (C. S).

3.—Boy of 10 years, the only unvaccinated one of 6, the others escaped.

4.—A neighbour.

The Kingswood Urban District Council erected a Hospital for these patients, and nursed them there from 7th July until August.

During these occurrences. a travelling showman—a coloured man—(S. B. 1534) was found by the Medical Officer of Horfield Prison, to be suffering from Small pox on 28th June, and was duly isolated at Novers Hill. Three other doubtful cases were under observation at the same time, no extension resulted.

Avonmouth had been free from Small-pox since May, when it re-appeared in one of the Huts about August 21st. The origin of this case was never very clearly made out, but it may have arisen indirectly from the previous Shirehampton group, either through "fomites" or "missed" case or cases. Between this date and the end of October, ten cases made their appearance in three of the Huts. This desultory outbreak was fully explained when Dr. Rolfe, at our suggestion, made a complete examination of every inmate of No. 53 Hut, when two children of the Hut-keeper, in a late stage of the disease, were found to be concealed in one of the bedrooms. The mother was also suffering slightly, no prosecution was possible as the plea of ignorance and chicken-pox was advanced, but the clearing out of this Hut effectually stopped all extension of the disease. The very last case occurred in the man E. H. (2475) who disinfected the Huts on October 31st and November 1st. This case which presented several interesting features, delayed eruption, etc., was communicated, by Dr. Rolfe, to the Lancet (December 31st, 1904, p. 1833).

All the cases were extremely mild, even in the unvaccinated children, a condition which contributes materially to the spread of this disease through non-recognition.

Sir John Aird and Co., through their manager Mr. Colson, and the Medical Officer, Dr. Rolfe, were indefatigable in tracing out and providing facilities for dealing with these cases, we only had to express a wish for it to be carried out at once, they formed indeed a model Committee.

EXTENSION TO CAERPHILLY.

It so happened that when the August re-appearance at Avonmouth took place, a labourer had left the infected hut and gone to Cærphilly, before the Avonmouth case declared, so that his name escaped the prompt investigation which follows the occurrence of each case. At Sengenhydd he developed Small-pox in September, and suffered from a severe confluent attack—he was not notified till the disease had advanced to the vesicular stage—so that 15 cases and 1 death resulted: 4 of the cases were confluent It seems curious that the Avonmouth cases should all have been exceptionally, almost absurdly mild, while the South Wales offshoot included several serious attacks and one fatal case.

Scarlet Fever or Scarlatina.

During the year 1904, 1,258 cases of Scarlet fever were notified, and 36 deaths occurred, giving a case mortality of 2·8 per cent.

18 cases were notified in Westbury-on-Trym Registration Sub-district during the last quarter of the year.

The prevalence of, and fatality from, this disease for the past fifteen years, that is to say, since Notification commenced, is shown here. Columns 2 and 4 should be used in comparing different years, as they are adjusted for the varying populations.

Scarlet Fever.

	1	2	3	4	5
Year.	Cases Notified.	Attacks per 100,000 Living	Deaths.	Deaths per 100,000 Living.	Case Mortality per Cent.
1890	559*2	253	40	18	7·1
1891	888	400	37	17	4·1
1892	1,442	644	47	21	3·2
1893	1,245	553	35	16	2·8
1894	485	214	16	7	3·2
1895	562	252	16	7	2·8
1896	1,352	586	59	24	4·3
1897	511	220	18	7	3·5
1898*	382	120	14	4	3·6
1899	697	217	13	4	1·8
1900	1,971	606	39	12	1·9
1901	2,206	670	36	10	1·6
1902	2,724	798	66	19	2·4
1903	2,168	639	49	14	2·2
1904§	1,258	366	36	10	2·8

*Enlarged City. § The City has been further enlarged in 1904.

*2 Notification commenced on February 12th, 1890, so that the case mortality is probably overstated.

The disease has been decreasingly prevalent throughout the year, and has been of mild character, as shown by the low case mortality ; the number of deaths per 100,000 population was exceeded in the years 1890, 1891, 1892, 1893, 1896, 1900, 1902, and 1903, that is to say, in 8 years out of the 15.

The notifications and the number of fatal cases have declined considerably since the previous year, The distribution of attacks by age is shown below :—

		Westbury-on-Trym, 4th quarter only,
Under 1 year	8	1
1-5 years	379	7
5-15 „	743	9
15-25 „	82	0
25 and upwards	46	1
	1,258	18

The distribution of the disease in each quarter of the year is shown in the following table for each Registration Sub-district of the City :—

SCARLET FEVER.

REGISTRATION Sub-District.	CASES NOTIFIED.				Year, 1904.	Attack Rate per 100,000 Living.
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.		
Ashley...	33	22	23	30	108	252
Bedminster	112	62	83	87	344	533
Clifton...	47	21	21	35	124	279
Knowle	29	46	61	47	183	1247
Redcliff	8	12	8	20	48	326
S. George	77	22	20	49	168	272
S. Paul and S. Augustine..	16	19	20	37	92	298
S. Philip	13	19	20	21	73	149
Stapleton	53	18	2	12	85	362
Municipal Institutions	18	5	2	4	29	—
Not belonging to City	—	—	3	1	4	—
Total	406	246	263	343	1258	366
Westbury-on-Trym*	—	—	—	18	18	535

* Since 1st October, 1904.

The attack rate per 100,000 population was lowest in St. Philip, Ashley, St. George, and Clifton, and highest in Knowle.

Isolation in Scarlet Fever at a public Hospital is not needed for the children of persons in good circumstances, who will indeed do as well or better at home at the expense of some little inconvenience and trouble to the parents. Isolation Hospitals are not, however, established to prevent inconvenience, but to save life and secure isolation in cases which cannot possibly receive adequate attention at home; as, for example, amongst the homes of the poorer wage-earners, with large families and few rooms.

The epidemic of Scarlet Fever, which began in 1900, has afforded the first opportunity we have had of observing the habits of this disease in the extended City. The added districts have proved most susceptible of infection, as was anticipated, and the immense increase in population and area has had the marked effect of prolonging the outbreak. The deficient Hospital accommodation has prevented any real attempt at controlling the spread of disease by isolation. The epidemic wave shows signs of substantial diminution after four years' prevalence.

The difference in the fatality of Scarlet Fever forty years ago and now is quite remarkable. For instance, in 1863 and the following year over 1,100 deaths occurred from this disease. In 1869 and 1870 over 900 deaths occurred, in 1875 and 1876 over 700, and in 1880 and 1881 nearly 400. In 1886 and 1887, 300 deaths occurred. The next epidemic was in 1896, when 59 deaths resulted. In 1900 a larger epidemic caused only 39 deaths, in 1901 a still greater prevalance of the disease resulted in only 36 deaths, while in 1902 the deaths rose to 66. The population in 1904 was 343,204 compared with 158,000 in 1861. If there had been a similar loss in regard to population as there was in the epidemic of 1863-64, the number of deaths in 1904 would have exceeded 2,000 instead of being only 36.

Enteric Fever.

During the year 1904, 172 cases of Enteric Fever were notified, and 26 deaths occurred, giving a case mortality of 15 per cent.

The prevalence and fatality from this disease for fifteen years past is here shown :—

ENTERIC FEVER.

	1	2	3	4	5
Years.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per cent.
1890*2	122	55	33	14	27·0
1891	116	52	23	10	19·6
1892	135	60	18	8	13·3
1893	122	54	26	11	21·3
1894	90	39	21	10	23·3
1895	89	39	22	9	24·7
1896	110	47	20	8	18·1
1897	343	147†	47	20	17·4
1898*	113	35	26	8	23
1899	219	68	35	10	16
1900	293	90	44	13	15
1901	281	85	40	12	14
1902	319	93	58	17	18
1903	134	39	21	6	15
1904‡	172	50	26	7	15

* Enlarged City. † Milk Outbreak.

*2 Notification commenced February 12th, 1890, so that the case mortality is probably overstated. ‡ City again enlarged in 1904.

No estimate can be made as to the number of cases occurring before 1890, when Notification commenced ; the high figures of 1897 are due to the milk outbreak of that year. In 1897, the City, containing 232,242 people, was extended, and in 1904 contained 343,204 persons, an increase of 110,962 persons. In 1904, a further extension was made. Allowance in columns 2 and 4 is made for the increase of population year by year, and the figures in these columns should be used for comparison. The attack rate fell very considerably in 1903 and 1904 from the high rate of 1902, and the death-rates (Col. 4) for the years 1903 and 1904 are the lowest recorded.

The distribution of the disease in each quarter of the year is shown in the following table, for each Registration Sub-district of the City. The sub-districts most affected are seen to be St. Philip, Redcliff, and St. George.

ENTERIC FEVER.

REGISTRATION. Sub-District.	Cases Notified.				Year 1904	Attack Rate per 100,000 Living.
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.		
Ashley	2	—	4	—	6	14
Bedminster	—	—	6	4	10	15
Clifton	1	3	1	3	8	18
Knowle	—	—	3	—	3	20
Redcliff	3	—	1	3	7	58
S. George	4	2	21	7	34	55
S. Paul and S. Augustine...	3	1	2	1	7	22
S. Philip	23	17	19	3	62	127
Stapleton	—	—	1	—	1	4
Municipal Institutions ...	3	2	2	—	7	—
Not belonging to City ...	2	6	18	1	27	—
Total	41	31	78	22	172	48

Enteric Fever is admitted for treatment into the Public Institutions, and 87 cases (6 from outside the City) were nursed in the Royal Infirmary, General Hospital, and

Children's Hospital through the year; 27 were treated by the Guardians (22 from outside the City), 25 cases were nursed at Ham Green. With the exception of 12 cases nursed at Clift House in 1897, no provision had been made for this disease in the City Hospitals before July, 1899, and cases, if not admitted to the general Hospitals, had to remain at home. There is still insufficient accommodation, as shown by the undue number of cases isolated at the Charitable Institutions, and this insufficiency has been considerably accentuated by the extension of the City and the consequent great increase in population, as well as by the undertaking to provide for the Guardians' cases, which should be adhered to. The recent extensions at Ham Green should place matters on a more satisfactory footing; but, even then, there will not be too ample isolation accommodation, considering the extent of the increase of population in 1897, and the further increase in 1904.

Diphtheria—Membranous Croup.

During the 52 weeks of 1904, 1,036 cases were notified as Diphtheria, and 15 as Membranous Croup—a total of 1,051 under these two headings.

Eight cases were notified in Westbury-on-Trym Registration Sub-District during the last quarter of the year, and 1 death was registered.

The number of deaths returned as due to Diphtheria was 102, and to Membranous Croup 3, or a total of 105 under the two headings, giving a case mortality from these causes of 9·9 per cent. The case mortality observed in 1894 was 39 per cent. : much of this difference is apparent only, as large numbers of very mild cases are sought for now by systematic bacteriological examination, which in 1894 would have escaped observation: this makes the figures as to case mortality very misleading.

The 105 deaths from Diphtheria and Membranous Croup correspond to a death-rate from these causes of 30 per

100,000 living, compared with a rate of 35 in 1903, of 54 in 1902, of 37·6 in 1901, 31·6 in 1900, 10 in 1899, 13 in 1898, and 15 in 1897. It is obvious that the epidemic intensity of this disease is wearing itself out.

The Diphtheria rate (including Membranous Croup) for the 76 large towns in 1904 was 19.

Bristol.

Diphtheria (including Membranous Croup) for 15 years.

Years	1 Cases Notified	2 Attacks per 100,000 Living	3 Deaths	4 Deaths per 100,000 Living	5 Case Mortality per Cent
1890*2	56	25	16	7	28·5
1891	70	31	16	7	22·8
1892	106	47	38	16	35·8
1893	141	59	53	23	37·5
1894	128	56	50	22	39·0
1895	165	69	34	14	20·6
1896	258	111	38	16	14·7
1897	205	88	36	15	24·7
1898*	217	68	44	13	20·2
1899	215	67	33	10	15·3
1900	512	157	103	31	21·1
1901	908	275	124	37	13·6
1902	1,109	325	189	54	17·0
1903	1,134	331	119	35	10·4
1904*	1,051	305	105	30	9·9

* Enlarged City.

*2 Notification commenced February 12th, 1890.

Diphtheria—Showing incidence of Cases and Deaths on the Sub-Districts of Bristol, 1904.

Incidence Rate per 100,000 Population.	Cases.	REGISTRATION SUB-DISTRICT. POPULATION.	Deaths.	Death Rate per 100,000 Population.
158·7	68	Ashley 42,842	2	4·6
147·2	95	Bedminster 64,505	13	20·1
159·7	71	Clifton 44,446	3	6·7
497·2	73	Knowle 14,679	3	20·4
75·4	9	Redcliff 11,925	2	25·1
183·1	113	S. George 61,670	20	35·6
142·5	44	S. Paul and S. Augustine 30,868	7	22·6
225·3	110	S. Philip 48,810	22	45·0
1551·6	364	Stapleton 23,459	25	106·5
—	96	Arising in Municipal Institutions	6	—
—	8	Not belonging to Boro'...	2	—
306·2	1,051	**City** 343,204	105	30·5
238·0	8	Westbury on Trym .. 13,443	1	29·7

In 1902, the highest rates of attack were in S. George, Stapleton, and Knowle ; in 1904, the highest rates of attack were in Stapleton, S. George, and S. Philip.

As was anticipated at the time of extension of the boundaries, the added districts have proved most susceptible to the spread of the communicable diseases attacking children at school ages. Diphtheria, in particular, has attacked these districts in succession, with a persistency as noticeable as the manner in which it has throughout avoided the congested slum-districts of the older City.

Comparative Table showing Diphtheria Mortality.

(From the Registrar General's Annual Summary).

	Death Rates from Diphtheria per 100,000 Living.						
	10 Years' Average, 1890-99	1899	1900	1901	1902	1903	1904
*76 Towns	—	—	—	—	26	20	19
33 Towns	33	40	35	30	—	—	—
London	49	43	34	29	25	16	16
West Ham	51	61	50	62	46	26	15
Croydon	29	13	18	16	21	12	17
Brighton	20	50	58	51	28	26	12
Portsmouth	23	64	53	37	34	39	36
Plymouth	13	20	11	11	13	13	12
Bristol	**14**	**10**	**31**	**37**	**54**	**35**	**30**
Cardiff	40	33	42	46	52	20	18
Swansea	33	136	58	18	25	22	25
Wolverhampton	35	19	10	12	20	9	18
Birmingham	24	29	14	16	24	26	24
Norwich	21	35	10	26	9	11	7
Leicester	27	106	151	71	15	13	3
Nottingham	8	13	12	12	12	26	28
Derby	11	8	6	19	10	3	25
Birkenhead	23	21	9	25	24	10	24
Liverpool	20	34	26	27	30	23	27
Bolton	10	9	12	16	25	21	16
Manchester	21	15	18	24	21	24	17
Salford	34	34	41	63	33	38	49
Oldham	15	16	13	9	33	39	25
Burnley	26	23	19	40	45	20	12
Blackburn	12	53	65	49	17	20	8
Preston	12	33	38	15	24	18	20
Huddersfield	12	5	2	6	13	15	15
Halifax	15	15	13	17	8	9	16
Bradford	8	11	11	11	30	19	57
Leeds	23	78	59	40	21	15	10
Sheffield	29	128	126	64	27	9	11
Hull	12	12	8	17	35	31	25
Sunderland	7	6	15	20	10	21	18
Gateshead	13	8	5	11	10	10	12
Newcastle	18	13	14	15	10	17	22

*The Registrar General now gives the rates for 76 of the large towns, and these rates are no longer comparable with the previously given rates for the 33 largest towns.

Comparative Diphtheria Mortality—Rise of Diphtheria Prevalence in certain Towns.

This Comparative Table, from the Registrar-General's Annual Summary, shows very clearly that the Diphtheria mortality, which in Bristol during the decade 1890-99 yielded the low average rate of 14 per 100,000 living, and during 1899 yielded the still more satisfactory rate of 10, rose in 1900 to the high figure of 31 per 100,000, in 1901 to 37, and in 1902 to 54—a rate exceeding the average rate for the large towns (26 per 100,000), and more than five times that recorded in 1899. During 1903, the rate of mortality fell to 35, and in 1904 to 30.

But the table also shows that Bristol has been by no means singular in suffering from a temporary prevalence of fatal Diphtheria. It has affected in similar manner many other Towns of acknowledged general healthiness, and tends to remain epidemic for three or four years, when it dies out apparently from exhaustion of soil. Its prevalence bears no constant relation to the "fever" mortality rate, which may be taken as generally indicating the "sanitary" condition of a district. Indeed, where the fever rate is high, the Diphtheria rate may be remarkably low; while an excessive mortality from Diphtheria may be co-existent with a low fever rate. It is noteworthy that in Bristol the disease has for the five years of its prevalence generally avoided the congested slum districts of the older City, while falling heavily upon the more recently built fringing added districts. A large proportion of these added districts consists of a working-class population, especially susceptible to Diphtheria, not because they are "insanitary," but largely because *there is a preponderance of young and susceptible children of school ages amongst such a population.*

The outbreak of 1900-1904 seems to have included two marked features:—(1st) the introduction into the City of a new and virulent variety of the bacillus, and (2nd) personal spread by unrecognised cases presenting few or no characteristic symptoms, but containing Diphtheria bacilli in nose or throat.

Diphtheria—Notifications in each Quarter in the Sub-Districts of Bristol, 1904.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
Ashley	29	13	7	19	68
Bedminster	27	19	18	31	95
Clifton	20	6	8	37	71
Knowle	45	14	5	9	73
Redcliff	0	2	3	4	9
S. George	48	20	17	28	113
S. Paul	15	8	3	18	44
S. Philip	22	31	13	44	110
Stapleton	72	188	44	60	364
Arising in Municipal Institutions ...	37	34	10	15	96
Not belonging to Boro'	5	...	2	1	8
CITY	320	335	130	266	1051
WESTBURY-ON-TRYM...	...	...	...	8	8

Diphtheria in Bristol since 1900.

To complete the history of the outbreak :—This disease, in its commencing prevalence in virulent and epidemic form in Bristol in 1900, was introduced into Bedminster, extending also to Totterdown, and as (by pressure from

Bedminster itself) Clift House had been prematurely closed, no hospital provision was at first available to check its prevalence in this district. On 30th September, however, the Hospital was re-opened, and has since been in constant use and proved of great service. School influence was at first not apparent, but in subsequent extensions it was, as a rule, soon manifest.

Diphtheria at Totterdown.—By the end of the year 1900 Diphtheria in Bedminster and Knowle was declining, but in March, 1901, a fresh group of cases occurred in Totterdown in connection with the schools, which we were fortunately able to deal with satisfactorily, with the temporary medical assistance afforded.

Diphtheria in Redcliff, Hotwells, and Avonmouth.—In 1901, the disease appeared in Redcliff, apparently carried across from Bedminster, and gave rise to a school outbreak, which was with some difficulty controlled by persistently seeking out and dealing with unrecognised cases in contacts. The disease subsequently attacked the Hotwells and Avonmouth Districts, the measures taken to meet it were dealt with in the Report for 1901.

Diphtheria in Horfield.—Early in February, 1902, several cases of Diphtheria were notified among scholars attending a school in Horfield ; and the commencement of the known cases was emphasised, as is usual, by severe and fatal cases.

Temporary medical assistance was again afforded, and 102 children were inspected. The outbreak was promptly got under control.

Diphtheria in St. George.—The next school outbreak involved a larger school and a different district, one recently added to the City. This district is also situated on the confines of the City, adjacent to an outside Urban District, so that the usual difficulties of divided control were superadded to the inherent difficulties of this most troublesome disease·

In S. George, which contains a population of 58,194, occasional cases only had been notified up to the beginning of 1902. Early in February, however, the Two-Mile Hill School, with eleven hundred scholars, became seriously implicated.

Temporary medical assistance was again afforded, and 3 unsuspected cases were found in addition to 29 showing suspicious organisms in nose or throat.

Under prompt action the disease as a school outbreak rapidly subsided, but continued to spread in the district.

In April, temporary medical assistance was again afforded. A considerable drop in notifications followed, resulting in discontinuance of medical assistance after May 26th.

During July, August, September and October, the notifications averaged 8 a week: and the disease had again become scattered. Special measures were once more adopted on November 5th, and continued till the end of the year.

Following this work a steady fall in the notified cases seemed to hold the relation of effect to cause.

I have no doubt that the intermission in special medical assistance as soon as some improvement resulted, permitted the disease to gain headway, evidenced by the recurring outbreak.

Diphtheria in Bristol in 1903.

In the early part of the year Diphtheria fluctuated between S. George and Bedminster, and temporary medical aid to the Department was again afforded, while out-patient treatment was instituted as before at S. George's Hospital for that district, and at Clift House Hospital for Bedminster: this was continued up to June, and improvement followed.

In March a visitor started a fresh outbreak at Avonmouth, which soon abated under stringent measures.

In August a case from London started an outbreak in a charitable institution in Bristol, which caused trouble for some few weeks.

Outbreak at Chester Park Schools.—But the most serious occurrence of the year was the outbreak in November at the Chester Park Council Schools, Stapleton. The chief incidence of the disease was upon a girls' class (Standard III.), taking girls between 9 and 11 years of age.

The School itself contained 343 girls and infants on the books, at ages from 5 to 13; and twelve teachers. Up to December 12th, 26 cases were reported in connection with these schools.

The school outbreak in Fishponds proved, as previously had happened in the case of S. George, the least difficult part of the outbreak to control. When this had subsided there was a lull, leading to the discontinuance of medical assistance at the time when it should have proved most useful; the kind assistance given by local practitioners was necessarily variable in completeness, and, being voluntary, could not be strictly organised. The absence of a local out-patient Hospital for the effectual spraying and douching of throats and noses, left nothing but reliance upon home treatment (and home treatment of cases apparently well is not apt, in the absence of any medical knowledge and appreciation of the habits of disease, to be effectual).

The school infection having subsided, the home infection by undetected cases began here, as it did in S. George, to make itself felt; but owing to the lack of continuous medical help and proper facilities for out-patient treatment, the home infection gained more hold than in other districts, and in the new year (1904) gave further trouble in Fishponds, a part of the Stapleton District.

Diphtheria in Fishponds in 1904.

The disease continued to prove troublesome in Fishponds up to the middle of the year, and a special Report thereon was presented to the Health Committee on June 7th.

The most careful means for dealing with the disease were adopted, especially isolation and careful medical inspection of contacts at home and at school for bacteriological evidence of implication ; two houses were rented in order to continue the out-patient treatment of cases which appeared to be " carrying " the disease, and care was taken to work in harmony with the adjacent extra - urban Sanitary District, from which some children attended school.

There was, unfortunately, in this district, some resistance to measures approved by your Committee, and consequently, I believe, some prolongation of the outbreak, but at length the persistence of the disease was overcome, and through the Autumn the returns became more favourable.

Laboratory Examinations in Diphtheria and Enteric Fever.

	Diphtheria.	Enteric Fever.	Total.
1895	87	—	87
1896	206	—	206
1897*	379	254	633
1898	390	127	517
1899	485	290	775
1900	915	452	1,367
1901	2,527	425	2,952
1902	3,771	420	4,191
1903	5,545	240	5,785
1904	6,858	308	7,166

*City enlarged in November, 1897.

In November, 1902, this work, which had for seven years been voluntarily undertaken by the Medical Officer of Health, was transferred to Professor Kent, of the Bacteriological Laboratory, University College. Bristol.

Report on Bacteriological Work, 1904.

The number of specimens examined during the year ending December 31st, 1904, was 7,417. Of these, as usual, the larger number were for Diphtheria, over 7,000 examinations having been made for the diagnosis of this disease.

In 512 the Klebs-Loeffler bacillus was found in free growth, in 662 it was found in scanty growth, 1,916 showed the presence of suspicious forms, including the Hofmann bacillus, and in 4,002 no specific organisms were found.

During this year, as during last, many cases diagnosed as Diphtheria, and often marked as severe, were found on examination to show streptococci only.

A point of some interest has been the occurrence of special types of organisms in special districts: these types have as a rule persisted for a limited period, and have then been replaced by others.

Of the specimens of blood examined for Typhoid Fever, 110 gave a positive result with Widal's serum test, whilst in 212 cases negative results were obtained. In only three cases was an indefinite conclusion arrived at—a point of difference from last year, when many such cases occurred.

The total number of specimens examined is greater by 1,632 than in 1903, an increase of more than 27%. This does not take account of examinations carried out for the recognition of the Tubercle bacillus, as the arrangements for such examinations were not in operation until late in the year. If these be included, the total number of examinations for the year reaches 7,423.

The recognition of the value of bacteriological examinations as a means of diagnosis is spreading rapidly on all sides, and even in the country laboratory investigation is often invoked in order to clear up a doubtful case.

Progress has been made with the investigations upon the Hofmann bacillus, but up to the present the results have not been published.

A. F. STANLEY KENT, M.A., Oxon.,
Director of Bacteriological Laboratory.

University College,
Bristol.

Plague.

The following Memorandum has been issued to Medical Practitioners:—

Although there are no cases of human Plague at present known to exist in the British Isles, it is expedient to remember that the disease is still prevalent in many parts of the world, and that the possibility of introduction, especially into Seaport Towns, is ever present. Moreover, the history of first introductions has generally included the non-recognition of initial cases, because there must always be a mental bias against an unusual diagnosis, where no chance of the presence of a novel disease is known to exist.

Study of the introduction and diffusion of Plague amongst civilised Western populations shows that the extension of the common "bubonic" form of Plague depends more on *place* infection than on direct transmission from person to person; and the potency of place infection (in the absence of that gross overcrowding and neglect which sometimes accompany filth or poverty and constitute the insanitary conditions of Plague), depends on rat infection; for Plague differs from the common communicable diseases in this, that it is epizoötic as well as, or more specially than, it is epidemic, and that man and certain animals are reciprocally infective. All the outstanding etiological phenomena of Plague fall within this explanation.

The importation of Plague by carriage over sea from infected into clean countries is governed by similar conditions; and the living animal infection is obviously more elusive, and therefore of greater risk, than either the human infection or the infection of inert *fomites.*

A characteristic case of Bubonic Plague is little likely to escape observation. The continued and urgent fever, the typical haggard *facies,* the prostration and delirium, and the appearance during the first five days of some adenitis of the groin glands (70%), the axillary glands (10%), or, more rarely, of the popliteal or epitrochlear elbow glands, of those at the root of the neck, or, in children, at the angle of the jaw; especially if painful or accompanied by surrounding connective tissue infiltration and followed by suppuration, tell their own tale; but it must not be forgotten that the pain may hardly be complained of, and that there may be no progress towards suppuration in the affected glands.

Certain forms of Plague may thus be readily over looked.

Pneumonic Plague, generally fatal in four or five days, is probably the most infectious form, as the expectoration contains plague bacilli in enormous numbers. The initial fever is severe, and the sputum is usually profuse, watery, and blood-tinged, instead of viscid and rusty as in ordinary pneumonia. But the symptoms are often misleading, and the occurrence of any cases of pneumonia amongst sailors recently arrived, or amongst dockside labourers recently engaged in discharging grain or other cargoes from suspected ports, is a reason for special care.

"Pestis siderans" and "septic plague" are malignant forms of the disease, leading to death in a short time, often before the development of characteristic symptoms.

"Abortive, larval plague," "pestis ambulans," "pestis minor," are names applied to mild cases in which buboes may form, suppurate and resolve without notable constitutional symptoms, but followed occasionally by sudden collapse. Such cases may easily escape observation or may confuse diagnosis, in determining which the history of exposure must be a strong factor.

The occurrence of fever and adenitis under suspicious circumstances involving possible exposure to infection, particularly if the fever rapidly assumes an adynamic character, must always be viewed with suspicion.

Any communication addressed by Medical Practitioners to the MEDICAL OFFICER OF HEALTH at this address will receive attention, with a view of securing any necessary bacteriological control of diagnosis, or other assistance required.

D. S. DAVIES, M.D.,
Medical Officer of Health.

PUBLIC HEALTH OFFICES,
40, PRINCE STREET, BRISTOL.

Cholera—Choleraic Diarrhoea.

No deaths occurred from this disease during 1904, and no cases were notified; although it is not unusual during the late summer or autumn to have one or two fatal cases of acute Diarrhœa notified under this heading. The importance of the question is, in a Sea-port Town, to exclude the possibility of true Asiatic Cholera. *(See Port Report).*

Diarrhoea—Infantile Diarrhoea.

The number of deaths returned as due to Diarrhœal diseases during the year was 206 compared with 107, 165, 345, 348, and 134 fatal cases recorded in the previous five years. Of the 206 deaths 174 occurred in children under 1 year of age, 22 at ages 1 to 5, 3 at ages 5 to 15, 2 at ages 25 to 65, and 5 in persons aged 65 and upwards. These deaths give a Diarrhœal death-rate of 0·59 per 1,000 living.

1 death was registered in Westbury-on-Trym Sub District during the last quarter of the year.

Erysipelas.

During the year 1904, 256 cases of Erysipelas were notified, and 9 deaths were returned, compared with 244 cases and 14 deaths in 1903. In houses where cases were notified, various insanitary conditions were found to exist and were remedied, but I do not attach any special value to the notification of this disease.

Puerperal Fever.

Twenty-seven cases of Puerperal Fever were notified, compared with 31 last year. Sixteen cases proved fatal, compared with 23 in 1900, 17 in 1901, 17 in 1902, and 14 in 1903.

Typhus Fever.

No case of Typhus Fever has been reported in the City since a small group of cases in 1889-90. This disease disappeared as an epidemic when Registration of Common Lodging Houses and control of gross insanitary conditions were taken in hand, in the sixties and seventies of the last century.

Measles.

The deaths from Measles in the City in 1904 numbered 94, compared with 11 in 1903, 411 in 1902, with 7 in 1901, with 200 in 1900, 38 in 1899, 309 in 1898, 57 in 1897, with 143 in 1896, 8 in 1895, 116 in 1894, 25 in 1893, 105 in 1892, and 239 in 1891. These fluctuations are characteristic of Measles prevalence in large centres of population.

Of the 94 deaths, 89 occurred in children under 5, and 5 between 5 and 15.

In the first quarter 12 deaths occurred, 7 in the second, 4 in the third, and 71 in the fourth quarter.

Measles is the cause of so much mortality, and is so important in relation to school attendance that I may repeat some of the information given under this heading last year:—

No two authorities seem agreed upon the best measures for the repression of Measles epidemics, and the disease has up to the present risen and fallen in alternate years practically unchecked.

The difference in procedure is shown thus:—

School Closure. In 9 out of 67 towns no closure is attempted, in 10 it is only carried out when the attendance is seriously affected (*i.e.*, too late to act as a preventive measure), in 24 the Infant Departments only are closed, in 13 the whole schools are closed at one or another stage of an epidemic.

Exclusion of Contacts. In 7 towns no action is taken.

Sunday Schools. In 25 towns nothing is done, in 18 closure is occasionally advised, in 18 it is advised as a routine proceeding. In Reading, Parliamentary powers have been obtained to close Sunday schools or private schools if necessary.

Notification. In England and Wales notification obtains in 55 towns and 21 rural districts, and has been given up in 54 districts after trial.

Disinfection is not carried out at all in many towns, and at the height of an epidemic could not be coped with without much extra assistance.

Of the deaths from Measles, 90 to 95 per cent. occur in children under 5 years of age ; it is most fatal in the second year of life, and the attack incidence is highest during the third, fourth, and fifth years.

Hence school attendance at these ages is fraught with great danger to the children ; for in epidemic years Measles is responsible for as much as 8 per cent. of the total deaths. It would seem highly desirable, for many reasons, that children under five should be excluded from school attendance, the law does not require it, and the practice is attended by far greater disadvantages, mental and physical, than advantages ; but as, unfortunately, a Government Grant is obtained for these attendances, there is small hope of securing amendment.

The prevalence and fatality of Measles epidemics has materially increased together with the increased attendance of children under 5, and the only use for such attendance is to afford some relief to mothers, which is obtained at great cost in money to the ratepayers, and in life to the children. The schools are indeed used for Crêches, for which they were not intended.

The most effective method of many that have been tried, appears to be, if taken early, school examination; or, later, a combination of school closure and house-to-house visitation, obviously requiring much extra assistance.

1. If Measles is due, but has not yet burst into epidemic form, careful class to class medical inspection of the Infant Departments may result in discovering many early cases; this inspection must, however, be persevered in over some months.

2. If the epidemic has started in the school, the closing of the Infant Departments, followed by careful and persistent following up of cases by house-to-house visitation, advice, and disinfection, has proved most satisfactory in small districts; in larger centres of population it is a counsel of perfection, which could only be ensured by the provision of a largely increased Staff—medical, inspectorial, and cleansing.

(See also Dr. Howard Jones' Paper, "The Control of Measles," Public Health, 1904).

A partial solution of the question is afforded by the following rules, adopted at Brighton by the Education Committee:—

A. "No scholar shall attend an infants' school from a "house where there is a case of Measles, German "Measles, Whooping Cough, Chicken-pox, or "Mumps; but children in departments for older "children who have previously had the disease in "question, need not be excluded under similar "circumstances."

A similar rule has recently been adopted by the Bristol Education Committee.

B. The Education Committee at Brighton have also, on the advice of their Medical Officer of Health, issued instructions to the Head Teachers to *refuse admission to children under three years of age*, unless special permission for the admission of such children has been given by the School Attendance (Parents') Sub-committee. The Education Committee also state that they *wish the attendance of children between three and four years of age to be discouraged.*

The general adoption of similar Rules in all Districts would not only benefit the children, who ought not to be subjected to school routine at these tender ages, but would also result in limiting the fatality of these diseases, which, though they are often looked upon as minor ailments, are terribly and persistently fatal amongst the younger elementary school children. The relative fatality for a period of 10 years in the City of Bristol from various diseases is here shown :—

	1890-1899. Deaths.
Diarrhœa	1676
Measles	1300
Whooping Cough	1045
Diphtheria	770
Enteric Fever	335
Scarlet Fever	326
Smallpox	26
Typhus Fever	0

Whooping Cough.

The deaths from Whooping Cough in the City numbered 110, compared with 65 in 1903, 105 in 1902, 189 in 1901, 54 in 1900, 118 in 1899, 110 in 1898, 118 in 1897, 64 in 1896, 45 in 1895, 177 in 1894, 80 in 1893, 154 in 1892, 53 in 1891, and 201 in 1890.

Fifty-eight of the deaths occurred in children under 1, 49 at ages 1 to 5, and 3 at ages 5 to 15.

In the first quarter of the year 19 deaths occurred, 31 in the second, 31 in the third, and 29 in the last quarter of the year.

The disease was most fatal in Bedminster (33), S. George (23), S. Philip (15), and S. Paul and S. Augustine (10).

The mortality in this disease is largely due, as in the case of Measles, to the want of care exercised during the course of the illness, to avoid exposure to inclement weather. It bears a similar relation to school attendance to that noted in the case of Measles, and it is almost equally fatal at ages under 5.

Influenza.

This disease was credited with 27 deaths during 1904, compared with 33 in 1903, 56 in 1902, 65 in 1901, 53 in 1900, 119 in 1899, 57 in 1898, 40 in 1897, 19 in 1896, 95 in 1895, 26 in 1894, 68 in 1893, and 45 deaths during 1892.

Three deaths were registered in Westbury-on-Trym Registration Sub-District during the last quarter of 1904.

Influenza was chiefly returned as a cause of death during the first quarter of the year, and the figures for the four quarters are 13, 6, 1, and 7 respectively.

I am, my Lord Mayor and Gentlemen,
Your obedient Servant,
D. S. DAVIES, M.D.,
Medical Officer of Health.

TUBERCULOSIS.

Phthisis (Pulmonary Consumption).

On April 18th, 1899, a Special Report on Tuberculosis was presented to the Health Committee, and was printed and circulated.

The fatality of Pulmonary Phthisis, in comparison with that from the seven principal zymotic diseases is shown here for fourteen years.

	1891	1892	1893	1894	1895	1896	1897*	1898	1899	1900	1901	1902	1903	1904
Phthisis... ..	382	372	363	332	317	370	302	393	430	415	401	415	366	413
Seven Principal Zymotics ...	426	461	363	457	268	435	430	851	582	606	530	942	375	578

* In 1897 the City was extended.

Amongst the recommendations contained in the Special Report it was advised that arrangements should be made for the taking of samples of milk, and their examination for tuberculous infected matter, as and when found necessary by the Medical Officer of Health. The importance of this question is shown by the fact that Bristol derives its milk supply from some 154 farms, of which 85 are in Gloucestershire, 67 in Somersetshire and 2 in Wiltshire.

The Health Committee authorised a systematic examination of the milk from all farms supplying the City, which was carried out by the inoculation test by Professor Délépine, of Manchester. Out of 74 samples examined, only 4 showed the presence of Tuberculosis. The samples were taken from the milk as brought into the City for delivery.

It was further recommended that all meat and milk contracts for the Hospitals under the control of the Health Committee be framed upon lines protective against Tuberculosis. This has been carried out in recent contracts.

PREVENTION OF CONSUMPTION.

The Bristol City Council, on the recommendation of the Health Committee, has made the following arrangements for dealing with consumption in the City :—

Winsley Sanatorium.

They have contributed a sum of £5,000 towards the erection and equipment of the Winsley Sanatorium, and a further sum of £1,300 annually towards the maintenance of 20 beds, to be reserved at their disposal (Resolutions of Council of 13th May, 1902, and 8th December, 1903).

Winsley Sanatorium was opened in the early part of December, 1904. The first Bristol case was admitted on 27th February, 1905.

Notification.

In September, 1903, the Council approved of the initiation of a voluntary system of Notification of Phthisis, according to the programme of the Health Committee, viz.:—

1. To circulate to every house in the City a copy of a leaflet of simple precautions to be observed in regard to Consumptive patients, and in regard to houses inhabited or vacated by Consumptive patients or in which Consumptive patients may have died.

2. To circulate amongst Publicans, Owners and Occupiers of Workshops and Workplaces, on public hoardings, and in other public places, Notices and Handbills calling attention to simple precautions, and especially as to the danger of spitting.

3. After an interval of three months, again to distribute leaflets to every house in the City

4. To then invite Notification of Phthisis (Consumption of the lungs only) from the District Medical Officers of the Guardians, and from the Medical Officers of Dispensaries.

5. At the same time to make provision for the examination of samples of Phthisical (Consumptive) Expectoration free for Medical Men.

The distribution of the leaflets throughout the City was first undertaken by the members of the St. John's Ambulance Brigade (City of Bristol Corps), who also undertook to provide Dettweiler Sputum Flasks, free of cost, to Consumptive patients unable to afford the purchase. The Health Committee supply gratuitously, to patients recommended by the Corps, the necessary disinfecting solution for use in these flasks. A second distribution of pamphlets was undertaken by the Health Committee.

The commencement of Voluntary Notification, and the arrangements for the examination of Phthisical Expectoration have not yet been initiated, but will be commenced during 1905.

Disinfection of Premises after death of Consumptive Patients.

Each week the Consumptive deaths are singled out from the death returns, and are entered upon special enquiry cards. The district inspectors visit, make enquiries, and secure disinfection of the rooms or premises, and of any article that may be required.

CITY HOSPITAL, HAM GREEN, BRISTOL.

Report of the Resident Medical Officer for the Year 1904.

To The Members of the Committee of Management.

Gentlemen,

I have the honour to submit to you the Sixth Annual Report, dealing with the work of the above Hospital for the statistical year ending December 31st, 1904.

There were 79 patients in Hospital at the beginning of the year, 719 patients were admitted, 662 discharged well, 21 were transferred to other Institutions, and 29 died, thus leaving 86 patients in Hospital at the end of the year.

The admissions numbered four more than in the preceding year.

The average daily number of patients in Hospital was 88, which is rather lower than in the preceding year. The highest daily number was 111, on December 30th, and the lowest 49, on August 14th.

The average length of stay in Hospital of patients who recovered was 47·6 days, of fatal cases, 17·3 days.

The average death-rate among the patients for all diseases was 4·2 per cent.; five deaths occurred within 48 hours of admission to Hospital, if these be excluded, the corrected mortality rate becomes 3·5 per cent.; although this is rather higher than in the preceding year, still, considering the large number of cases of Diphtheria and an increased number of Enteric Fever cases treated, it must be considered highly satisfactory. Some opponents of Isolation Hospitals have endeavoured to establish their case by stating that the death-rate in Hospital is no lower than among patients treated at home, but even if this were true, it must not be forgotten that, generally speaking, the worst cases and the most ill-conditioned subjects find their way to Hospital.

Statistical tables are appended, showing the diseases treated, mortality rates, complications observed, and other particulars.

Scarlet Fever.

34 cases were in Hospital at the beginning of the year; 374 cases were admitted (including one case sent in as Diphtheria and another which proved to be Measles). 326 were discharged well, 20 were transferred to Novers Hill Hospital, and 7 died, thus leaving 55 cases in Hospital at the end of the year.

Removal to Hospital was effected in 70 per cent of the cases during the first week of the illness; the large number of cases admitted during the second week of the illness was chiefly due to the lack of Hospital accommodation. Isolation Hospitals have little chance of checking the spread of disease when cases which urgently need removal are kept at home in a semi-isolated condition for two weeks or longer.

Age Incidence.—Of the patients admitted 30·3 per cent were under 5, 42 per cent between 5 and 10, 18 per cent between 10 and 15, and 9·7 per cent over 15 years of age.

The average length of stay in Hospital of patients who recovered was 45·8 days; of fatal cases 15. The longest stay of any one patient was 122 days.

The chief causes of long detention in Hospital were Rhinorrhœa, Otorrhœa, Scarlatinal Nasal Diphtheria and Tardy Desquamation.

Fatality Rate.—Calculated on the discharges, the fatality rate was 2·1 per cent, the rate being rather higher among females than males. Three adults suffering from true Scarlatina Maligna died within 48 hours of admission to Hospital, if these be excluded, the corrected fatality rate becomes 1·2 per cent. With the exception of the malignant cases, all the deaths occurred in patients under 7 years of age.

Symptoms and Diagnosis.—The type of disease was generally mild, but three cases of true Scarlatina Maligna were admitted; in one of these the rash was abundant and hæmorrhagic, in another abundant and dusky in color, whilst in the third it was ill-developed and hæmorrhagic, and found in patches chiefly about the joints; delirium was marked in all three cases and in one was almost maniacal.

About 94 per cent. of the patients suffered from Scarlatina Simplex, 5 per cent. from Scarlatina Anginosa, and not quite 1 per cent. from Scarlatina Maligna.

One patient notified as Diphtheria was found to be suffering really from Scarlet Fever, and another sent in as Scarlet Fever was a case of Measles.

14 Patients were found on admission to be suffering also from Nasal Diphtheria and one from Pharyngeal Diphtheria; the importance of detecting such cases is manifest, as only in this way can Post-Scarlatinal Diphtheria be prevented; the majority of these patients who were harbouring the Diphtheria Bacillus came from districts where Diphtheria was for the time being very prevalent: hence the importance of careful examination of Scarlet Fever admissions in concurrent outbreaks of the two diseases.

Five patients were suffering from Whooping Cough on admission; 3 were incubating Chicken Pox, and 2 German Measles on admission. The admission of such cases to large wards, unless the second disease is at once recognised, often causes much trouble and anxiety, and yet one, at times, is powerless to prevent any spread of the disease.

Three patients with indefinite symptoms on admission, later developed distinct Scarlatinal attacks. Thirteen cases remained extremely doubtful throughout.

Cause of Death.—Of the fatal cases, 4 resulted from Toxæmia and Syncope, and 1 from Toxæmia and Bronchitis; 2 others were due to complications, viz.: Broncho-Pneumonia.

Complications.—Rhinitis was marked in 22 cases.

Adenitis was severe enough in 9 patients to be called a complication, and in 8 of these Abscess supervened. Cellulitis of the neck occurred in 2 cases.

Severe Ulcerative Stomatitis occurred in 4 cases.

Otorrhœa was noted in 36 patients: in 17 of these the right, in 8 the left, and in 11 both ears were affected.

Albuminuria, variable in point of duration, but occurring chiefly during convalescence, was found in 15 cases.

True Nephritis was noted in 3 patients only.

Scarlatinal Rheumatism was marked in 8 cases, in 5 of which heart mischief resulted.

Bronchitis occurred in 8 cases and Broncho-pneumonia in 4.

One distinct case of Relapse occurred on the 32nd day of the disease.

Of the complications, 45 per cent. were found in patients under 5, 84 per cent. in patients under 10, and only 16 per cent in patients over 10 years of age.

Sequelæ.—One patient was discharged with slight Chronic Otorrhœa, 3 with Chronic Heart Trouble, and 1 with Tubercular Knee, following Scarlatinal Arthritis.

Treatment.—Segregation of the cases was adopted as much as possible, and whenever the Hospital accommodation admitted of it a convalescent discharge ward was used for uncomplicated cases for about a fortnight before discharge. An attempt has been made to keep attacks of Otorrhœa as low as possible by antiseptic treatment of nose and throat throughout the patients' stay in Hospital ; by this means the late Rhinorrhœa, which is common in Scarlet Fever cases, has been to a large extent prevented.

"*Return Cases.*"—Infection was carried home in the case of 8 patients, out of a total of 326 discharges, giving a "return case" rate of 2·4 per cent. The average length of stay in Hospital of the infecting case was 55 days, and the average interval between the return home of the patient and the "return case," 7·5 days. Five of the patients had suffered from no complication, whilst the other three developed Otorrhœa, which however, had thoroughly cleared up at least a week before discharge.

The subject of "Return Cases" is one of extreme importance, both from Etiological and Hospital management points of view, and although a large amount of work has been done on the subject, nothing really definite can be stated until the specific organism is discovered ; however, the following remarks may be of some interest :—

1.—"Return Cases" tend to become more common when wards are over-crowded, and when acute cases are nursed along with convalescent cases.

2.—They are not more common at the height of an epidemic, provided there is sufficient Hospital accommodation.

3. They are not peculiar to any one season of the year, but they have a decided tendency to occur in groups, whether from Hospital or external causes it is impossible to say.

4—They rarely occur after the discharge of adults, though their stay in Hospital is usually the minimum.

5.—They arise, in more than half the cases, as a result of the discharge of mild uncomplicated cases, and though, in some cases, the infective patient is found to develop some discharge from the nose or ear after the arrival home, nothing can usually be found clinically; such cases are analogous to mild cases of Diphtheria which often retain the Bacillus for long periods, probably as a result of the small amount of reaction set up in the patient.

6.—They frequently occur again and again in one family, showing individual susceptibility and retention of infection.

7.—A Secondary case frequently arises in a family at an interval of 6 or 8 weeks, which, if the primary case had been discharged from Hospital, would be called a "return case," showing that infection is often left behind after the removal of the first case.

Diphtheria.

45 Cases were in Hospital at the beginning of the year; 317 were admitted, 310 were discharged well, 1 was transferred to Eastville Workhouse, and 20 died, thus leaving 31 patients in Hospital at the end of the year.

Removal to Hospital was effected in 77 per cent. of the cases where a definite history of onset could be ascertained during the first week of the illness, but only 25 per cent. of these cases were admitted on or before the fourth day of the disease, up to which time the benefits of Antitoxin are so well marked.

The average day of the disease on admission in cases which proved fatal was the 6th.

The Diphtheria Bacillus was found before admission in 299 out of the 317 cases notified as Diphtheria; of the other 18, in 5 no culture was taken, in 9 the culture was negative, and in 4 the culture contained suspicious organisms.

Age Incidence.—Of the patients admitted, 24 per cent. were under 5 years of age, 44·5 per cent. between 5 and 10, 22·4 per cent. between 10 and 15, and 9 per cent. over 15.

The average length of stay in Hospital of cases which recovered was 46·8 days, of fatal cases 19·3 days. The longest stay of any one patient was 168 days, though 15 other patients were in hospital over 100 days.

Paralysis of various parts and the persistence of the organism in the nose, throat, or ear, were chiefly responsible for the long detention.

Fatality Rate.—Calculated on the discharges, the fatality rate was 6 per cent. One death occurred within 30 hours of admission; if this be excluded the rate becomes 5·7 per cent. The death rate was much higher among males than females; 55 per cent. of the deaths occurred in patients under 5, 95 per cent in patients under 10, and 5 per cent. in patients over 10 years of age.

As the most urgent cases are not admitted to this Hospital, and a large number of patients harbouring the Diphtheria Bacillus but with few clinical symptoms were received for treatment, the above fatality rate is somewhat flattering, accordingly the cases have been divided into two classes :—

1.—200 cases with marked clinical symptoms, in which the fatality rate was 9 per cent.

2.—110 cases, chiefly of the nasal variety, in which the fatality rate was nil.

Symptoms and Diagnosis.—The disease was confirmed bacteriologically before admission in 299 of the 317 cases notified as Diphtheria.

Five cases in which no culture was taken were clinically Diphtheria.

Of 9 cases in which the culture was negative, 8 were clinically Diphtheria and 1 was doubtful.

Of 4 cases in which the culture was suspicious, 3 were clinically Diphtheria and 1 was doubtful.

The seat of the disease in the 299 positive cases was as follows:—

Throat	181
Nose	80
Nose and Throat	27
Throat and Larynx	7
Ear	4
Total ...	299

The large percentage of cases in which the nose was found affected, viz. : 35·7 is well worthy of mention; in 4 throat cases, the nose, and in 2, the ear, were found subsequently affected with the disease.

Early Albuminuria was present in 49 per cent. of the clinical cases.

Marked irregularity of the pulse in force and frequency during convalescence and necessitating treatment was observed in 27 per cent. of the cases.

Rhinorrhœa, generally purulent and at times sanious, was marked in 15 out of the 20 fatal cases.

Cause of Death.—Of the deaths 15 were due to Toxæmia and Syncope, 1 to Cerebral Embolism and Exhaustion, 1 to Palatal and Diaphragmatic Paralysis, 1 to Pneumonia, 1 to Bronchitis from co-existing Whooping Cough and Syncope, and 1 to Meningitis and Temporo-sphenoidal Abscess.

Complications.—Severe Adenitis was noted in 12 cases, Cellulitis of the neck in 3, and Cervical Abscess in 2 cases.

Otorrhœa occurred in 10 cases, in 2 of which the Diphtheria Bacillus was found in the discharge.

Epistaxis was severe in 8 cases, and in 15 troublesome vomiting occurred.

Broncho-pneumonia and Bronchitis were noted in 3 cases each.

Three distinct relapses occurred on the 18th, 32nd and 57th days of the disease respectively.

Pleurisy was noted in 1 case and Purpura in 2.

Four other complications from their rarity and from the fact that they occurred in mild cases are worthy of record: one patient suffering from mild Nasal Diphtheria was found soon after admission to be suffering from a large Empyema which necessitated Thoracotomy; one patient who had a mild attack of Faucial Diphtheria developed Embolism of the left middle Cerebral Artery on the 43rd day of the disease, and another, Embolism of the right Popliteal Artery on the 28th day of the disease, ending in Dry Gangrene and amputation through the thigh: the other patient was suffering from Aural Diphtheria and developed Meningitis and Temporo-sphenoidal Abscess 69 days after admission.

The following Paralyses were also observed: Soft Palate in 50 cases, Ciliary Muscle in 13, Ocular Muscles in 10 Skeletal Muscle in 4, Diaphragm in 3, Ptosis, Aphonia, and Intercostal Muscle Paralysis in 1 case each.

Treatment. Active local antiseptic treatment was carried out in all cases.

Antitoxin was injected into 245 of the 317 patients admitted in doses varying with the severity of the case. Patients with no clinical symptoms or signs had no Antitoxin unless they were being nursed alongside acute cases.

An Antitoxin Rash was observed in 29 of the clinical cases, or in 16 per cent. of injected patients: in 2 cases the rash was accompanied by rise of temperature and joint pain.

22 of the patients had received some Antitoxin before admission but the dose in no case had exceeded 4,000 units; still, the timely injection of a small dose may make all the difference to the patient's chance of recovery.

Tracheotomy was performed in 2 cases, with 1 recovery.

The good effects of Antitoxin were well marked in cases injected early: many cases would have undoubtedly succumbed but for its use.

No patient was discharged until free from all cachexia, and until at least one culture taken 36 hours after the cessation of antiseptic treatment was found to be negative. During the year 836 bacteriological examinations were performed from cases or suspected cases of Diphtheria, of which 91 were done at the Hospital, and 745 at the University College Laboratory.

As Antitoxin is such an excellent prophylactic all nurses on commencing work in the Diphtheria wards have been advised to have an injection of the serum : this treatment has not been tested long enough for me to publish any reliable statistics.

Enteric Fever.

26 Cases were admitted, 24 were discharged well, and 2 died.

Removal to Hospital.—22 of the cases gave a positive Widal reaction before admission : 2 gave a doubtful reaction and 1 a negative, and in the other case no reaction was ascertained.

Only 2 patients were admitted in the first week of the illness, 14 in the second, 7 in the third, and 1 in the fourth.

The average length of stay in Hospital of cases which recovered was 47·8 days, of fatal cases 6 days. The longest stay of any one patient was 85 days.

Fatality Rate.—Calculated on the discharges the fatality rate was 7·7 per cent. One death occurred within 30 hours of admission to Hospital; if this be excluded the corrected rate becomes 4 per cent.

Symptoms and Diagnosis.—24 of the cases (22 of which gave a positive Widal reaction before admission) were well marked clinically.

Of the 4 others, 1 gave a doubtful Widal reaction but was clinically Enteric Fever: 1 gave a doubtful reaction and proved to be a case of Pneumonia: 1 was admitted on clinical diagnosis only and was found on admission to be suffering from Appendicular Abscess, which was at once operated on, the patient making a good recovery: 1 gave a negative reaction before admission but was clinically well marked and ended in Intestinal Perforation, which was confirmed by operation.

A history of Diarrhœa was obtained in 54 per cent. of the cases.

The characteristic Eruption was noted in 58 per cent. of the cases admitted during the first three weeks of the illness.

A palpable Splenic Enlargement was made out in 50 per cent. of the cases.

Cause of Death.—Both deaths were due to complications, viz., 1 from Peritonitis and the other from Intestinal Perforation and Peritonitis.

Complications.—Albuminuria was noted in 6 cases and Bronchitis in 5.

Relapse occurred in 5 patients, one of whom had two relapses.

Intestinal Hæmorrhage, Pneumonia, Peritonitis, Perforation and Peritonitis occurred in 1 case each.

One Miscarriage occurred on the 40th day of the disease.

Treatment.—Rather a high percentage of Relapses occurred, but they appeared in most cases independently of giving solid food, and in no case was there much constitutional disturbance.

One patient, in whom Perforation of the Bowel was diagnosed, was operated upon within 6 hours and the Perforation closed, but unfortunately he died from exhaustion 48 hours after: this case is instructive from the fact that *(post mortem)* only the one ulcer which had perforated could be found, and hence in some cases, if only the patient's general condition is fairly good, the outlook is favourable.

Urotropine was given to all patients during the last two weeks of their stay in Hospital.

Mixed Infections.

The average length of stay in Hospital of such cases was 68·7 days. The longest stay of any one patient was 179 days.

Cases of this description are divided into three groups:—

Group 1.—Cases notified and admitted as suffering from two diseases.

Two patients from another City Hospital were admitted suffering from Scarlet Fever and Diphtheria. Both made a good recovery.

Group 2.—Cases which were found on admission or shortly afterwards to be suffering from a second disease, the infection of which was received before admission.

14 Scarlet Fever patients were also suffering from mild Nasal Diphtheria, and 1 from Faucial Diphtheria: the admission of such cases, unless recognised and isolated, is the most potent factor in the causation of attacks of Post-Scarlatinal Diphtheria.

Five Scarlet Fever and 2 Diphtheria patients were also suffering from Whooping Cough.

Two Scarlet Fever Patients were also suffering from, and 2 others were incubating Chicken Pox on admission, and gave rise to 5 other cases.

One Scarlet Fever patient was incubating German Measles on admission, and another developed an attack the day after admission.

Patients admitted actually suffering on admission from a second disease usually give rise to no trouble, but when they are admitted incubating one, infection may easily be spread, if the attack be a mild one, before it is recognised.

Group 3.—Cases which received the infection of a second disease whilst in Hospital.

Two Diphtheria patients contracted mild attacks of Scarlet Fever, the origin of which could not be discovered.

Five Scarlet Fever patients contracted Chicken Pox, and 1 German Measles, the infection in each case having been introduced from outside the Hospital.

Vaccination Statistics.

All patients were examined on admission as to their state of Vaccination, with the following results :—

Unvaccinated	167
No Mark, but said to have been Vaccinated	5
One Mark	208
Two Marks	151
Three Marks	96
Four or more Marks	92
Total ...	719

Thus of 719 patients examined, 23·2 per cent. were Unvaccinated, whilst of those Vaccinated 37·6 per cent. had only 1 Mark, 65·7 per cent. had not more than 2 Marks, 82·5 per cent. had not more than 3 Marks, and only 16·5 per cent. had 4 Marks as prescribed by the Local Government Board.

In 69 out of 208 patients who had only 1 Mark, the Cicatrix was very small and poorly foveated.

Re-Vaccination was found to have been performed on 22 patients, the majority of whom came from Public Institutions where this is compulsory.

Staff Illnesses.

Two Nurses and 2 Maids contracted Scarlet Fever.

Two Nurses contracted Diphtheria.

All the above made good recoveries.

General.

I must again draw attention to the high percentage of cases in which Pediculosis was found among the patients on admission: such cases were fully as common in patients coming from the newer parts of the City as from the slums. Naturally more girls were found affected than boys, but the following figures speak for themselves and are not pleasant reading: out of 614 boys and girls examined, 242 or 39·2 per cent. had lice or nits or both in their hair, which required active treatment, and in many cases necessitated cropping the hair: but whilst 21 per cent. of the boys' heads were dirty, 56 per cent. of the girls' were found so.

During the year 14,519 articles of clothing were disinfected by steam by the Hospital Disinfector.

The end of the year has seen the completion of the Hospital extensions, which were sorely needed, whereby there have been added a 50-bed, two-storied Scarlet Fever Pavilion, an 8-bed Observation Pavilion, a Discharge Block and Administrative Accommodation. There has thus been a large increase in the Nursing and Working Staffs.

Four *post-mortems* were performed to confirm the cause of death.

In conclusion, I beg to acknowledge the services rendered by the Matron (Miss Garden), and the good work done by the Nursing and Working Staffs.

I am, Gentlemen,

Your obedient servant,

JAMES FLETCHER, M.D., D.P.H.

HAM GREEN HOSPITAL.

TABLE I.

Admissions and Discharges during 1904, with the number of Patients in Hospital at the beginning and end of year.

Disease.	Remaining in Hospital at end of year 1903.		Admitted.		DISCHARGRD.						Remaining in Hospital at end of Year 1904	
					Recovered.		Transferred.		Died.			
	M	F	M	F	M	F	M	F	M	F	M	F
Scarlet Fever	18	16	182	192	163	163	7	13	3	4	27	28
Diphtheria...	21	24	142	175	137	173	1	—	12	8	13	18
Enteric Fever	—	—	13	13	12	12	—	—	1	1	—	—
Mixed Infections	—	—	2	—	2	—	—	—	—	—	—	—
Totals	39	40	339	380	314	348	8	13	16	13	40	46
	79		719		662		21		29		86	

HAM GREEN HOSPITAL.

TABLE II.

Monthly admissions and average daily number in Hospital.

	Scarlet Fever.		Diphtheria.		Enteric Fever.		Mixed Infections.		Average Daily No. in Hospital in each Month.
January ...	30	98	14	86	—		—		80
February ...	32		36		—		—		93·2
March ...	36		36		—		—		100
April ...	31	64	47	134	—		0	2	98·7
May ...	6		65		—		0		101·8
June ..	27		22		—		2		89·3
July ...	24	82	8	30	2	21	—		66·3
August ..	28		3		14		—		60
September ..	30		19		5		—		81·2
October ...	51	130	15	67	4	5	—		84·7
November ..	46		24		1		—		100
December ..	33		28		0		—		100·7
Year 1904	374		317		26		2		88

HAM GREEN HOSPITAL.

TABLE III.

Showing Ages and Sex of Patients Discharged during the Year 1904 with the Fatality Rate.

Scarlet Fever.

	MALE.			FEMALE.			TOTAL.		
Age.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0–1 ..	2	..	..	1	.	...	3	...	...
1–2 ..	2	..	..	1	...	...	3	..	..
2–3 ..	12	...	...	9	...	...	21	...	..
3–4 ...	21	1	4·5	16	1	5·8	37	2	5·1
4–5 ..	17	...	...	17	1	5·5	34	1	2·8
5–6 ...	18	..	...	23	...	...	41	...	..
6–7 ...	14	...	...	25	1	3·8	39	1	2·5
7–8 ..	14	...	...	9	..	..	23	...	...
8–9 ..	8	...	...	13	..	...	21	...	...
9–10 ...	8	...	...	7	...	...	15	...	...
10–15 .	35	1	2·7	24	...	...	59	1	1·6
15–20 ...	4	..	...	5	...	...	9		...
Over 20 ...	8	1	11·1	13	1	7·1	21	2	8·7
Totals ...	163	3	1·8	163	4	2·3	326	7	2·1

Diphtheria.

	MALE.			FEMALE.			TOTAL.		
Age.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0–1 ...	2	1	33·3	...	1	100	2	2	50
1–2 ..	3	1	25	5	1	15·8	8	2	20
2–3 ..	10	2	16·6	6	1	14·2	16	3	15·7
3–4 ...	10	1	9	8	..	...	18	1	5·2
4–5 ...	9	2	18·1	15	1	6·2	24	3	11·1
5–6 ..	15	2	11·7	20	...	..	35	2	5·4
6–7 ...	13	1	7·1	14	...	..	27	1	3·5
7–8 ..	14	...	...	20	...	...	34	...	...
8–9 ...	5	2	28·5	17	1	5·5	22	3	12
9–10 ...	11	..	...	10	2	16·6	21	2	8·7
10–15	34	...	...	39	1	2·5	73	1	1·3
15–20 ..	6	...	..	8	.	...	14	...	...
Over 20 ...	5	...	...	11		...	16	...	..
Totals ...	137	12	8	173	8	4·4	310	20	6

Enteric Fever.

	MALE.			FEMALE.			TOTAL.		
Age.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0–5 ...	1	...	...	1	...	...	2	..	...
5–10 ...	1	...	...	1	..	...	2	...	...
10–15 ...	3	...	..	1	..	...	4	.	...
15–20 .	1	1	50	1	...	...	2	1	33·3
20–25 ..	2	...	...	3	..	...	5	...	...
25–30 .	2	...	..	2	.	...	4	...	...
30–35 .	1	...	...	...	...	...	1	...	...
35–40 ..	1	...	..	1	...	...	2	...	...
40–45 .	...	...	...	1	1	50	1	1	50
45–50 ...	...	...	...	...	...	..	...	.	...
Over 50 ...	..	..	...	1	...	..	1	..	...
Totals ...	12	1	7·7	12	1	7·7	24	2	7·7

HAM GREEN HOSPITAL.

TABLE IV.

The Stage of the Disease when Patients were admitted to Hospital.

DAYS OF THE 1st WEEK.								WEEK OF ILLNESS.				
Disease.	1	2	3	4	5	6	7	1st	2nd	3rd	4th & over.	Total.
Scarlet Fever	—	6	38	73	61	49	36	263	89	14	8	374
Diphtheria	—	4	11	29	49	63	20	176	46	3	4	229
Enteric Fever	—	—	—	—	—	—	2	2	14	7	1	24

HAM GREEN HOSPITAL.

TABLE V.

Complications observed in patients discharged during 1904.

Scarlet Fever.

	Otorrhœa.	Rhinorrhœa.	Albuminuria.	Adenitis.	Bronchitis.	Nephritis.	Pneumonia.	Arthritis.	Abscess.	Carditis.	Cellulitis.
In 326 non-fatal cases ...	34	20	15	7	6	3	2	8	6	5	1
In 7 fatal cases	2	2	...	2	2	...	2	...	2	...	1
Total 333 cases	**36**	**22**	**15**	9	8	3	4	8	8	5	2
Percentage	10·8	6·6	4·5	2·9	2·4	·9	1·2	2·4	2·4	1·5	·6

Diphtheria.

	Paralysis.	Severe Vomiting.	Otorrhœa.	Adenitis.	Epistaxis.	Pneumonia.	Cellulitis.	Abscess.	Bronchitis.	Relapse.
In 200 non-fatal cases	75	4	10	8	2	2	...	2	2	3
In 20 fatal cases	8	11	...	4	6	1	3	1	1	...
Total 220 cases	**83**	**15**	**10**	**12**	8	3	3	3	3	3
Percentage	37·7	6·8	4·5	5·4	3·6	1·3	1·3	1·3	1·3	1·3

HAM GREEN.

Statistics for each Year since opening of Hospital.

TABLE VI.

Admissions Classified according to DISEASE.

YEAR.	Scarlet Fever.	Diphtheria.	Enteric Fever	Mixed Infections.	Quarantine.	TOTAL.
1899 (From July 24th.)	194	4	21	...	7	226
1900	571	70	38	...	...	679
1901	452	27	44	...	4	527
1902	536	128	42	21	...	727
1903	370	323	11	11	...	715
1904	374	317	26	2	...	719
Totals	2497	869	182	34	11	3,593

Discharges and Deaths.

YEAR.	Scarlet Fever.		Diphtheria.		Enteric Fever.		All other Diseases,	
	Dis-charges	Deaths.	Dis-charges.	Deaths.	Dis-charges.	Deaths	Dis-charges.	Deaths.
1899 (From July 24)	127	5	3	...	3	...	5	...
1900	485	15	50	12	33	1	...	...
1901	452	10	34	1	39	5	...	...
1902	540	11	67	14	33	4	18	2
1903	377	4	308	17	17	2	12	...
1904	326	7	310	20	24	2	2	...
Totals	2,307	52	772	64	149	14	37	2
Average Fatality per cent,	2·2		7·6		8·5		5·1	

CITY HOSPITALS.--Comparative Expenditure.

	NOVERS HILL.		HAM GREEN.		CLIFT HOUSE.	
	Year ending 25th March, 1904,	Year ending 25th March, 1905,	Year ending 25th March, 1904,	Year ending 25th March, 1905,	Year ending 25th March, 1904,	Year ending 25th March, 1905,
Salaries and Wages :—	£ s d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d.
Medical Superintendent	50 0 0	50 0 0	50 0 0	50 0 0	...	...
Medical Officer	143 15 0	125 0 0	229 0 0	224 16 0	143 15 0	125 0 0
Matron	78 0 0	66 8 9	102 11 0	108 0 0	...	...
Nurses, Porters, and Servants ...	654 6 0	821 5 6	1,560 6 9	1.826 1 9	206 4 7	212 15 5
Groceries, Provisions, &c.	630 12 4	763 5 10	1.603 10 10	1,731 13 11	295 17 5	318 17 6
Medical Sundries and Disinfectants ...	64 8 4	63 3 5	259 8 2	290 9 6	70 8 3	64 7 4
Drapery Goods (including Uniforms) ...	40 0 5	221 11 3	85 3 8	195 5 3	3 15 4	47 8 11
Lighting and Heating	253 6 10	255 16 11	558 3 5	613 11 9	71 12 2	88 1 1
Rates and Taxes (including Water Rate) ..	179 10 2	170 2 6	687 16 9	703 9 3	23 17 6	23 6 9
Fire and Boiler Insurance	14 3 3	13 19 1	43 4 11	57 19 2	2 4 2	2 2 5
Printing, Stationery, Periodicals and Advertising	28 8 1	62 0 8	55 10 2	157 14 2	13 9 11	19 19 1
Repairs, and Alterations	62 13 7	300 15 6	110 9 9	207 5 10	18 15 11	17 7 7
Miscellaneous	26 6 5	84 15 4	123 19 10	161 3 9	23 15 2	41 16 3
Fees to Surgeons and Consultations ...	...	...	19 19 0	21 9 0	4 4 0	4 4 0
Rent of Telephone	9 10 0	9 10 0	40 0 0	47 7 3	5 0 0	5 0 0
Supplying and Fixing Telephones ...	4 17 7	...	...	...	...	..
Furniture, Fittings, and Ironmongery ...	51 11 4	219 14 9	159 11 9	89 7 7	53 2 0	49 7 6
Crockery and Earthenware	2 10 4	48 17 6	16 11 5	5 1 0	3 5 7	4 18 8
Cleaning Materials, Brushes, &c ...	30 7 10	89 4 3	179 2 3	142 12 9	11 2 9	28 7 11
Toys, Books, &c.	6 4 1	...	6 2 6	9 4 0	...	...
Cleaning out Cesspools	23 13 3	...	...		...	...
Donkey Pump	...	..	43 5 0		...	...
Installation of Gas Lighting	...	...	...		35 7 1	...
Fire Escape	..	48 6 0	..		...	...
Total Expenditure in the Year ...	**2,354 4 10**	**3,413 17 3**	**5,933 17 2**	**6,642 11 11**	**985 16 10**	**1,053 0 5**
Number of Patients in the Year ...	218	215	684	811	158	115
Total Cost per week for each Patient, including all the Working Expenses ...	s. d. 18 9	s. d. 45 4	s. d. 22 1	s. d. 23 3	s. d. 16 4	s. d. 26 2

J. CROMPTON, F.S.A.A., City Accountant

BRISTOL CITY HOSPITALS.

Medical Attendant's Report for the Statistical Year Ending December 31st, 1904.

NOVERS HILL HOSPITAL.

Scarlet Fever.

Patients remaining from 1903	38	240
„ Admitted *	202	
„ Discharged	193	240
„ Transferred to Ham Green	8	
„ Died	10	
„ Remaining	29	

* Two of those admitted were members of the Hospital Staff and contracted Diphtheria.

Causes of Death.—Three were due to Pneumonia, 1 to Diphtheria, 4 to Toxæmia, 1 to Convulsions supervening persistent Diarrhœa, and 1 was Moribund on admission.

The complications and sequelæ were of the usual nature, and have all been duly recorded in the Hospital Case Book. With the exception of a few remarks about Diphtheria, they do not call for any special comment.

Diphtheria

Has been a troublesome complication. No less than 75 per cent. proved on admission to be suffering in a greater or less degree; of these about 50 per cent. developed from "suspicious forms only" into the more severe or true nature of the disease, especially in nose and ears. Great difficulty was found in preventing it spreading to other patients, this being due to inadequate isolation accommodation at our disposal, partly owing to the fact that two of the Isolation Wards have been acquired for administration purposes, and partly owing to the un-inhabitable state of the old Hospital Cottage.

Small-pox.

Eighteen cases were admitted during the year: 6 of these on probation proved not to be Small-pox, 1 confluent and the rest either abortive or of the usual Bristol mild type, indeed so mild that they could easily have been passed over undiagnosed by any medical practitioner not having suspicions of Small-pox.

I have still to complain of the want of proper bathing facilities; efficient disinfection of patients under present arrangements is impossible. We urgently require properly equipped bathrooms, connected with retiring-rooms, so as to avoid the necessity of patients returning to the Ward or of being unduly exposed to the cold air immediately after their final bath. Bathing, as I have before remarked, is one of the most essential forms of disinfection. Isolation by itself is of little or no value, unless assisted by proper and efficient bathing, which is impossible under present conditions. Then again, if retiring-rooms connected with the bathrooms were provided, such retiring rooms could be utilised for patients' friends when calling to take their children home.

The friends of patients bitterly complain of having to stand about the grounds in all winds and weathers without shelter, waiting while the patients are got ready, and I think they have every reason to grumble and be dissatisfied with the present arrangements.

The general and nursing administration, under Miss Watt, is good, and your Committee is to be congratulated on the choice of Matron. I must say the salutary change now existing in the Wards reflects great credit on her skill and perseverance.

CLIFT HOUSE AUXILIARY HOSPITAL.

Diphtheria.

Remaining from 1903	21	134
Admitted	113	
Discharged	97	134
Transferred to Novers Hill	1	
Died	14	
Remaining	22	

Tracheotomy was successfully performed in 4 patients: 2 of these made a rapid and good recovery, but the 2 others succumbed to Septic Pneumonia, 1 surviving the operation 1 month and 4 days, and the other 11 days.

Cause of Death.—One was due to uncontrollable Hæmorrhage, 1 to Purpura Hæmorrhagica, 1 to Convulsions, 5 to Heart Failure, 3 to Toxæmia, 1 to Pneumonia apart from Tracheotomy.

The usual sequelæ and complications occurred, *e.g.*, Albuminuria; Paralysis, Palatal, Pharyngeal, and general.

Two had Relapse Diphtheria. All have been duly recorded in the Hospital Case Book.

About 50 per cent. of the patients were treated with Antitoxin, an average of 6,000 units in each case, but as other treatment was adopted at the same time, it is somewhat difficult to know to which treatment the most credit should be assigned.

G. C. PAULI, M.R.C.S., L.R.C.P.,
Medical Attendant.

TABLE B. **Showing Population, Births, Marriages, and Deaths, and Birth and Death Rates in Bristol, for the 25 Years, 1880-1904. (All figures revised on 1891 Census).**

	Estimated Population	Registered Births.	Marriages in the District of the Bristol Union.	DEATHS.					ANNUAL RATES.			
				Total Deaths at all ages.	Under 1 Year.	Over 1 and under 5.	Over 60.	In Public Institutions.	Birth Rate per 1000	Death Rate per 1000	Infantile Mortality to 1000 Births.	Zymotic Rate.
1880	204,942	7,193	1,195	4,276	1,040	759	1,036	661	35·1	20·8	144·5	3·0
1881	207,229	7,121	1,103	4,050	900	608	1,084	650	33·8	19·5	126·3	2·2
1882	208.007	6,935	1,107	4,049	988	589	1,045	624	33·3	19·3	142·0	2·3
1883	209,552	6,844	1,073	3,795	917	405	1,057	608	32·6	18·1	133·9	1.1
1884	211,048	6,888	1,090	4,023	1,001	538	1,061	653	32·6	19·0	145·3	1·8
1885	212,586	6,786	974	4,281	1,052	639	1,134	629	31·9	20·1	155·0	2·2
1886	214,134	6,724	949	4,253	1,002	619	1,132	694	31·4	19·8	149·1	2·2
1887	215,694	6,619	956	4,542	996	796	1,244	680	30·6	21·0	150·4	3.0
1888	217,266	6,608	981	3,816	824	432	1,138	710	30·4	17·5	124·6	1·3
1889	218,848	6.694	932	4,021	976	595	1,062	660	30·5	18·3	145·8	2·2
1890	220,442	6.634	1,033	4,532	991	597	1,265	730	30·0	20·5	149·4	2·1
1891	222,049	6,725	937	4,631	972	603	1,371	815	30·3	20·8	144·5	1·7
1892	223,592	6,563	973	4,331	953	634	1,197	776	29·3	19·3	145·2	2·0
1893	225,028	6,788	955	4,241	959	411	1,283	851	30·1	18·8	141·2	1·6
1894	226.578	6,393	920	3,888	848	524	1,077	769	28·8	17·1	148·3	2·0
1895	228.139	6,622	846	4,108	935	414	1,321	837	29·0	18·0	141·1	1·1
1896	230,626	6,537	863	3,960	908	476	1,130	793	27.8	16·8	138·9	1·8
1897	232,242	6,514	884	3,988	949	434	1,195	821	28·0	17·1	145·6	1·8
1898	316,900	9,061	837	5,441	1,491	795	1,455	881	28·5	17·1	164·5	2·6
1899	320,911	9,336	2,714	5,844	1,467	567	1,781	1,049	29·0	18·2	157·1	1·8
1900	324,973	8,972	2,839	5,397	1,185	673	1,561	968	27·6	16·6	131·9	1·8
1901	329,086	8.889	2,786	5,249	1,159	558	1,379‡	1,039	27·0	15·9	130·4	1·6
1902	334,632	9,368	2,827	5,905	1,225	965	1,351	1,173	27·4	17·3	130·7	2·7
1903	338,895	9,239	2,738	4,822	1,075	467	1,189	1,094	27·2	14·2	116·3	1·1
1904	**343,204**	**9,135**	**2,894**	**5,347**	**1,222**	**545**	**1,386**	**1,162**	**26·6**	**15·5**	**133·7**	**1·6**

* Previous to 1899 this includes the Registration Sub-Districts of St. Mary Redcliff. Castle Precincts, St. Paul, St. James, and St. Augustine only.

† The Marriages for 1899 were for the first time given for an area co-extensive with the whole enlarged City.

‡ Over 65, according to the new age grouping in the L.G.B. Tables.

TABLE C. **Showing Number of Deaths from Zymotic Diseases in Bristol, during the 25 years, 1880—1904.**

																			Enlarged City.						
	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Small Pox ...	1	..	...	...	...	10	8	13	26	...	...	1†	...	2‡	16§	...	5	1	...	...	...	...	1	3	1‖
Diphtheria ..	6	10	8	13	19	25	28	23	26	15	16	16	38	53	50	34	38	36	44	33	103	124	189	119	105
Erysipelas ..	10	18	14	10	11	10	11	10	21	16	9	12	21	11	8	16	10	5	6	13	12	21	12	8	9
Scarlet F. ..	244	153	75	33	37	21	89	217	45	26	40	37	47	35	16	16	59	18	14	13	39	36	66	49	36
Typhus ...	...	7	10	1	2	...	...	...	...	...	1	...	...	...	..	...	...	...	...	...	..	...	...	...	...
Enteric F. ...	39	52	38	29	40	16	29	23	28	38	33	23	18	26	21	22	20	47	26	35	44	40	59	21	26
Puerperal F.*	..	...	..	...	18	12	8	9	17	11	12	7	25	16	11	8	8	6	11	22	20	17	17	14	16
Measles ...	73	120	54	33	46	159	101	147	61	185	92	239	105	25	116	8	143	57	309	38	200	7	411	11	94
Wh. Cough...	95	38	196	38	99	149	101	124	38	105	201	53	154	80	177	45	64	118	110	118	54	189	105	65	110
Diarrhœa ...	184	82	104	83	132	89	119	117	68	131	96	58	99	125	65	143	106	153	348	345	165	134	110	107	206

* Previous to 1884, Puerperal Fever was not separated in the Local returns from Puerperal Diseases generally.

† This death occurred in the Novers Hill Hospital outside the City, and so did not appear in the General Returns.

‡ Of these deaths one occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

§ Of these deaths five occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

‖ This death occurred on the Hospital Ship, Avonmouth. Patient was admitted from Keynsham Workhouse, outside the City.

CITY OF BRISTOL.

Infectious Disease (Notification Act), 1889.

Notifications received during each Quarter of 1904.

1904.—Table *a*.

NOTIFIABLE DISEASE.	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Totals of each disease.
Small Pox	...	22	4	8	34
Cholera Choleraic Diarrhœa ...	...	..	...	...	..
Diphtheria	317	331	129	...	1,036
Membranous Croup...	3	4	1	259	15
Erysipelas	72	59	43	7	256
Scarlet Fever or Scarlatina	406	246	263	82	1,258
Typhus Fever ...	...	...	...	343	...
Enteric or Typhoid Fever	41	31	78	...	172
Relapsing Fever ...	...	...	...	22	...
Continued Fever ..	...	...	...	...	...
Puerperal Fever ...	6	3	7	11	27
Totals in each Quarter	845	696	525	732	2,798

TABLE *b*.

CITY OF BRISTOL,

Notification and Deaths registered by Sub-Districts during the year 1904.

	Small Pox.		Choleraic Diarrhœa.		Diphtheria.		Membranous Croup.		Erysipelas.		Scarlet Fever.		TYPHUS.	ENTERIC TYPHOID.		Relapsing.	Continued		PUERPERAL.		Total cases in each Sub-District.
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths		Cases	Deaths	Cases	Deaths	
Ashley	17	..	...	...	68	**2**	...	...	25	**1**	108	**5**	...	6	...	...	...	...	4	**2**	228
Bedminster	8	...	..	...	92	**13**	3	...	36	**3**	344	**7**	...	10	**3**	...	...	...	2	**2**	495
Clifton	...	...	...	...	71	**3**	...	...	23	...	124	**4**	..	8	**2**	...	...	...	1	**1**	227
Knowle	...	...	...	..	73	**3**	...	...	14	.	183	**8**	...	3	**2**	...	...	...	2	**1**	275
Redcliff	1	...	...	..	9	**2**	..	...	4	..	48	**3**	...	7	**1**	..	..	...	..	...	69
St. George	1	...	...	...	105	**20**	8	...	42	**1**	168	**5**	...	34	**7**	..	...	..	6	**3**	364
St. Paul & St. Augustine	4	..	...	...	44	**7**	.	...	33	**1**	92	**2**	...	7	**2**	...		...	1	...	181
St. Philip	2	...	...	...	108	**21**	2	**1**	60	...	73	**1**	...	62	**5**	...		...	8	**5**	315
Stapleton	...	...	...	...	362	**23**	2	**2**	12	**1**	85	**1**	...	1	...	...	...	..	1	**1**	463
Public Insts.	1	..	...	..	96	**6**	..	..	7	**2**	29	..	...	7	**2**	...		...	2	**1**	142
Admitted to Public Insts from outside of Borough	...	...	...	...	8	**2**	...	...	...	..	4	...	...	27	**2**	...	...	..	...	..	39
Total cases of each disease	34	...	...	...	1,036	...	15	...	256	...	1,258	..	..	172	..	...	...	...	27	...	2,798
Total deaths from each disease	...	...	...	...	...	**102**	...	**3**	...	**9**	...	**36**	..	...	**26**	...	...	..	...	**16**	**192**
Percentage of deaths to known cases					9·8		20·20		3·5		2·9			15·1					59·2		6·8

CITY OF BRISTOL.

NOTIFICATION—1904.

Table *c*.—Showing the number of cases of Infectious Disease notified under the Infectious Disease Notification Act, 1889, since its adoption in 1890

									Enlarged City.						
	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Small Pox	0	16	0	165	201	4	42	10	2	0	0	1	6	46	34
Diphtheria and Membranous Croup	56	70	106	141	128	165	258	205	217	215	506	908	1109	1134	1051
Erysipelas	105	135	196	230	154	195	246	203	263	337	342	392	376	244	256
Scarlet Fever ..	559	888	1442	1245	485	562	1352	511	382	697	1957	2206	2724	2168	1258
Typhus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enteric Fever ...	122	117	135	122	90	89	110	350	113	219	285	281	319	134	172
Continued or Doubtful Fever ...	6	8	3	6	1	1	2	0	0	2	2	2	1	0	0
Puerperal Fever ..	11	11	34	30	18	16	21	10	18	36	46	43	39	31	27

COMPARATIVE TABLE—Showing the Estimated Population, Birth-rate, Death-rate, Zymotic-rate, Fever Death-rate, Diarrhœa Death-rate, and Infantile Death-rate of the 18 **LARGEST TOWNS OF ENGLAND & WALES** (those having a population of over 200,000); also of **EDINBURGH, GLASGOW, DUBLIN & CARDIFF**, for the Year **1904**, compared with the same particulars and rates for the group of 76 large towns.

From the Registrar General's Return.

	Estimated population, middle of 1904*	Birth-rate.	Death-rate.	Zymotic Rate.	Fever Death-rate.	Diarrhœa Death-rate.	Deaths under 1 year to 1000 Births.
76 Large Towns	15,271,287	29·1	17·2	2·49	0·10	1·20	160
London	4,648,950	27·9	16·6	2·18	0·07	1·04	146
Liverpool	723,430	33·7	22·6	4·66	0·15	2·52	196
Manchester	557,938	31·3	21·3	3·09	0·12	1·37	187
Birmingham	537,965	31·6	19·9	3.42	0·07	1·76	197
Leeds	450,142	28·0	18·0	2·56	0·11	0.99	175
Sheffield	432,940	32·0	16·8	2·20	0·12	1·35	158
Bristol	**343,204**	**26·7**	**15·6**	**1·64**	**0·08**	**0·51**	**134**
West Ham	288,424	32·3	16·5	3·43	0·11	2·08	162
Bradford	285,089	22·1	17·6	2·42	0·17	0·83	166
Hull	253,865	31·0	18·6	3·52	0·15	2·08	178
Nottingham	248,811	27·7	17·7	2·58	0·23	1·37	176
Salford	228,983	31·8	21·2	4·37	0·23	1·66	192
Newcastle	225,362	30·5	19·4	1·79	0·04	0·51	156
Leicester	224,186	26·6	14·5	1·97	0·06	1·31	167
Edinburgh	331,977	23·4	16·6	1·38	0·06	0·42	129
Glasgow	798,357	31·0	19·2	2·44	0·11	0·89	145
Dublin	378,994	29·6	23·4	2·36	0·19	0·89	169
Cardiff	176,313	29·6	14·8	1·80	0·05	0·72	146

* These Populations are based on the 1901 Census returns.

REPORT OF THE CHIEF INSPECTOR OF NUISANCES

Public Health Department,
40, Prince Street,
February, 1905.

1904—

To the Chairman and Members of the Health Committee.

Gentlemen,

I have again the honour of submitting the following brief report, with summaries shewing the amount of work effected in this Department during the year 1904.

The Complaints and Applications received at the Office numbered 1,092 as against 1,048 last year, all of which were duly investigated and dealt with as found to be necessary. Many of these were of the usual trivial character, such as a dead cat in the street or garden, and in 302 cases, or 27·6 per cent., no nuisance was found to exist at the places complained of. This, however, is a smaller percentage than usual, last year it was 30 per cent. and in the previous year 33 per cent.

2,825 cases of Infectious Disease were notified to the Medical Officer of Health and duly enquired into by the District Inspectors, and the result of such enquiries entered on the cards provided for that purpose. Last year there were 3,757 of such cases. This work alone necessitated 6,436 visits to the infected houses, and in addition to the case cards, school cards are made out and sent to the Head Master or Mistress of all schools where children residing in infected houses attend, as well as to the Secretary to the Education Committee. 2,229 infected houses were disinfected, and 52,813 articles of bedding, clothing, etc., removed therefrom and disinfected by super-heated steam, and returned to the houses; in the case of poor people these things are fetched in the morning and returned later in the same day, so that the people are put to as little inconvenience as possible. 476 similar articles were burnt at the request of the owners, being too far gone for disinfection. The clothing of patients taken to the Infectious Disease Hospitals at Ham Green and Novers Hill are not included in these totals, as they are all disinfected at those Hospitals, each of which is equipped with one of the Washington Lyon's Steam Disinfectors with all the latest improvements.

The informal Notices, numbering 1,816, have as usual been so successful that only 132 formal or Statutory Notices were required. There has been no prosecution for non-compliance with those Notices during the year although several persons were summoned, but before the day of hearing they did the necessary work and the cases were withdrawn on payment of the costs incurred, and in other cases considerable pressure had to be used before the owners could be induced to comply with the terms of the Notices.

In addition to the informal Notices already alluded to much good work has been done by verbal and written request to owners and occupiers many of whom much prefer this method of being dealt with instead of being served with the official blue Notices.

I append the usual Summaries of the Work effected by the various Inspectors.

Houses Let in Lodgings, or Tenement Houses.

The usual May Notices for the Annual Cleaning and Limewashing of these houses have once again been so successful that no prosecutions were necessary, a glance at the attached Summary shows that 1,740 rooms and 378 passages were so cleaned during the year. There are many similar houses now waiting the necessary measurements for registration. I am hoping to get an Inspector told off specially for this and other similar work. It is only by the constant supervision of such houses that overcrowding can be effectually dealt with.

Housing of the Working Classes Act, 1890.

Thirty-four houses have been dealt with under this Act with the following result, viz., 18 improved and made habitable, 12 closed without appealing to the Magistrates, and 4 closed under Magistrates' order, such order being made after the Magistrates had personally inspected the houses.

The occupants of the houses closed do not appear to have experienced much difficulty in getting other houses, although they almost invariably refuse to pay any rent after they know there is a probability of the house in which they reside being condemned. A considerable number of houses similar to the above have been closed and demolished to make room for the extension of business premises, and this work is still going on. In others the houses are being improved in various ways, such as putting up new and improved Sanitary Conveniences, providing Wash-houses, and re-paving the surface of the courts, &c. The whole of the courts now remaining in the city are being visited by Members of the Health Committee, with a view of taking steps to close such as are in their opinion unfit for human habitation, and getting improvements effected in others.

Slaughter Houses.

Those in the City prior to October last, number 109 being one less than last year, the licenses of 2 very old ones having lapsed in consequence of the premises being used for other purposes, and one new license granted, this latter being of course an Annual one. In addition, there have come into the City with the newly added area 7 others viz: one at Horfield, one at Avonmouth, 3 at Shirehampton and 2 at Westbury-on-Trym so that at the present time there are 116 slaughter houses scattered all over the City. A reference to the attached Summary of Work will show at a glance that considerable attention has again been given to their Sanitary condition, but it is a matter of impossibility for 2 Inspectors to inspect more than a very small proportion of the animals killed at those places, but your two Meat Inspectors, both good men, do the best they can and have been responsible for the destruction of no less than 37 tons 12 cwt. 3 qrs. of Meat of various kinds which was found to be unfit for food consisting of

The Entire	Carcases of	32 Beasts
„	„	346 Sheep
„	„	187 Pigs
„	„	5 Calves

The remainder consisted of parts of Carcases and odd pieces of meat from butchers' shops.

There were also destroyed for the same reasons 140 Rabbits, 3 crates of Chickens, 646 packages of Fish (which were not weighed) 657 packages of Vegetables and 54 ditto of Fruit.

The Carcases of Sheep destroyed consisted chiefly of Frozen Carcases, and the large number of Pigs is almost entirely due to Tuberculosis.

In dealing with the matter I wish once more to draw attention to the desirability of having Public Abbattoirs established, when all animals killed for the food of man could be easily inspected, but I am afraid this will not be accomplished in my time.

I cannot conclude this part of my report without gratefully acknowledging the very valuable assistance rendered to your Inspectors by the majority of Butchers and Bacon Curers in the City. About the minority the least said the better.

Factory and Workshop Act.

The work in connection with this Act has again been carried out in a very satisfactory manner and without friction of any kind either with H.M. Inspector of Factories or the public at large. The communications passing between the two offices are many and frequent, but always cordial and friendly. A reference to the attached Summary of Work accomplished under this Act will at once show the necessity for continuing on the same lines, as it must be obvious that a clean, well ventilated and healthy workshop must be beneficial alike to the employed and employers.

Dairies, Cowsheds and Milkshops Order.

Dairies and Cowsheds are about the same in number as last year, and in the older city have been kept up to the high standard previously attained, but in the newly added area there are about 30 Dairy Farms, with 50 or 60 Cowsheds, which will require considerable alteration and improvement before they reach the standard of those in the older parts of the city ; a good beginning has however been made, and so far the results are satisfactory.

Milkshops are always more difficult to deal with, as old ones are discontinued, new ones are continually starting, requiring considerable vigilance on the part of the Inspector in looking them up.

Common Lodging Houses

Have as usual been well looked after, and, generally speaking, the Bye-laws observed, so that no prosecutions have been necessary. There are now 42 Registered Common Lodging Houses in the City, containing 219 rooms, having accommodation 1,138 men, 20 single women, and 40 married couples.

In addition there is accommodation in private Institutions, under supervision, for 135 Males and 40 Females.

The Municipal Common Lodging House

at the corner of Wade Street and River Street, St. Judes, is now an accomplished fact, although it has not yet been opened for business, arrangements are in progress to that end.

Combined Drains.

During the past year 24 of such drains have been dealt with under Section 19 of the Public Health Acts Amendment Act 1890, and section 41 of the Public Health Act, 1875, to these 24 drains 104 houses were connected ; 14 of those drains were relaid by men in the employ of the Sanitary Committee, under the supervision of the City Engineer or his assistants, and the cost of such work apportioned amongst the various owners ; in the other 10 cases the work was done by the owners themselves, under the supervision of your Inspectors. It is to be hoped that the recent decision of the Court of Appeal in the case of Thompson *v.* The Eccles Corporation has at length settled the much vexed and puzzling question of Drain or Sewer (?) in such cases.

Phthisis.

During the year 416 deaths from this disease occurred in the city, as returned by the Local Sub-Registrars, and wherever such a death occurred in a private house disinfection was offered, and at 265 houses the offer was gladly accepted, and the rooms occupied by the deceased disinfected by your officers, the bedding, &c., being removed and disinfected in the usual way, and the rooms sprayed with Formalin, and in many cases the walls were afterwards scraped and re-papered, or limewashed as the case may be. In 79 other cases disinfection was refused by the occupants of the house for various reasons, such as : not considered necessary, or, the rooms had been cleansed and re-papered by themselves, &c. There is no legal power to enforce disinfection after such cases. The other fatal cases occurred in Public Institutions, when interference by your officers was unnecessary.

In many other non-fatal cases, on removal to an Institution, or from one house to another, similar action was taken, and is still being continued, and no doubt when the suggested voluntary notification of such cases is an accomplished fact, it will mean a considerable increase in the work of your officers.

My thanks are again due, and are hereby gratefully tendered to the Town Clerk and his assistants, and the City Engineer and his staff, for much valuable advice, information, and assistance.

I am, Gentlemen,

Your obedient servant,

JAMES W. KIRLEY,

Chief Inspector of Nuisances.

Summary of Work effected in the Health Department during 12 Years,—1893 - 1904.

Prepared by the Chief Inspector of Nuisances.

TABLE SHOWING THE NUMBER OF NUISANCES ABATED AND OTHER WORK DONE IN EACH YEAR SINCE 1893.

	1893	1894	1895	1896	1897	1898*	1899	1900	1901	1902	1903	1904
Number of Nuisances abated	8403	7564	7366	8800	8049	12118	11837	10920	10151	10482	10542	11007
Polluted Wells Closed	26	27	32	14	14	46	49	18	19	21	11	8
Houses supplied with Co.'s Water ..	223	79	85	68	76	151	150	78	83	65	47	51
Houses Disinfected ...	1815	931	651	1389	855	682	951	2216	2652	3130	2866	2229
Articles of bedding, &c., disinfected... ...	46959	36274	24320	49226	33847	25852	29965	55807	66626	68330	63919	52813

*Enlarged City.

Summary of Nuisances Abated and Work done by, and under the Supervision of the Inspectors in the Health Department during the Year ending Dec. 31st, 1904.

Prepared by the Chief Inspector of Nuisances.

NATURE OF WORK.	By District Inspectors	By Inspector of Dairies, &c.	By Inspectors of Workshops &c.	By Inspectors of Slaughter Houses, &c.	By Inspector of Common Lodging Houses.	By Inspector of Bake Houses.	Totals.
Visits and re-visits	30864	2340	5563	16095	212	1011	56085
Drains entirely relaid, &c. ...	332	2	36	6		6	382
Do. partially relaid	640	17	75	8	1	5	746
W.C.'s Fitted with new pans, &c.	858	14	116	10	5	13	1016
Do. Cleansed and Amended ...	235	29	95	2			361
Do. Fitted with Flushing Appliances	269	10	130	10	5	13	437
Additional W.C. accommodation provided	31		32			3	66
Dilapidated Houses, Repaired, &c,	460						460
Defective Roofs Repaired ...	294	4	27			20	345
Sinks and Yard Gullies Trapped..	1553	30	86	35		5	1709
Yards Paved by Owners	663	33	97	9		20	822
Cesspools abolished	39						39
Offensive Deposits removed .	176	134	10	32		6	358
Keeping of Pigs, &c. prohibited..	131						131
Smoke Nuisances abated	13					2	15
Offensive Trades do.	49						49
Polluted Wells closed	8						8
Company's Water provided to houses	38		13				51
Nuisances from overcrowding abated	50						50
Dairies &c., Cleansed & Improved		62					62
Workrooms, and Passages, limewashed, etc.			503				503
Do. better ventilation secured			9			31	40
Rooms at Tenement Houses, limewashed etc.	1740						1740
Passages and Stairs at do. ...	378						378
Slaughter Houses, limewashed ..				308			308
Do. Paving repaired ...				16			16
Limewashing, etc., secured ...		396			70	106	572
Other Nuisances abated	239	28	8	14	18	36	343
Totals	8196	759	1237	450	99	266	11007

No. of Complaints received and attended to	1092
,, Offensive trades visited	153
,, Smoke observations taken	285
,, Times smoke test applied to drains	1549
,, Notices served, informal...	1816
,, ,, formal	132
Half-yearly Cleansing Notices served, Common Lodging Houses ...	92
,, ,, ,, Bake-Houses	234
,, ,, ,, Dairies, Cowsheds, etc.	390
,, ,, ,, Slaughter Houses	308
,, ,, ,, Tenement Houses	272
No. of Visits to houses *re* infectious disease	6436
,, Houses disinfected after such disease	2229
,, Articles of bedding, etc., removed and disinfected	52813
,, Do. do. and burnt	476
Total number of articles dealt with	53289
Weight of Meat destroyed as unfit for food ...	37 tons 12 cwt. 3 qrs.

JAMES W. KIRLEY,
Chief Inspector of Nuisances

City of Bristol.

FACTORY AND WORKSHOP ACT, 1901.

REPORT OF THE MEDICAL OFFICER OF HEALTH ON THE ADMINISTRATION OF THE ACT IN THE CITY OF BRISTOL DURING THE YEAR 1904. (Sec. 132, F. & W. Act, 1901).

Workshops.

The Factory and Workshop Act (1891) transferred the Sanitary control of " Workshops " and " Workplaces " from the Inspector of Factories to the City Council acting as the Urban Sanitary Authority.

A special Inspector of Workshops was appointed, Workshops were at once placed on the Register and inspected, and this control has been continuously exercised since its commencement up to the present. Upon the extension of the City in 1897, a second special Inspector of Workshops was appointed. The progress of the work year by year, is shown in the following table :—

TABLE I. **Workshops.** City of Bristol.

Showing particulars in regard to the Inspection of Workshops since 1891.

Year.	Population of City.	No of Workshops on Register.	No. of Nuisances abated.	Visits and Re-visits.	Particulars sent to H.M. Inspector.	Communications received from H.M. Inspector.
1892	223,592	134	215	970	—	5
1893	225,028	349	568	2377	303	15
1894	226,578	584	644	2188	128	18
1895	228,139	764	558	1978	29	32
1896	230,623	881	578	2456	10	35
1897	232,242	1042	660	2674	14	19
CITY ENLARGED.						
1898	316,900	1123	1203	4943	16	21
1899	320,911	1602	1117	4494	37	16
1900	324,973	1800	1004	4263	13	15
1901	329,086	1846	1005	4875	12	25
1902	334,632	1872	1187	5480	21	62
1903	338,895	1532	1110	5885	39	71
1904	343,204	1537	1237	5563	45	88

The details of work secured during the year 1904 are shown in the following table :—

TABLE II. **Workshops.** CITY OF BRISTOL.

Work secured by the Special Inspectors of Workshops, etc., in the City of Bristol, during the year 1904.

Total Visits and Re-visits	5563
Total Nuisances abated	1237

PARTICULARS OF NUISANCES DEALT WITH.

DRAINAGE AND FILTH NUISANCES.	Drains entirely relaid	36
	Drains partially relaid	75
	W.C.'s fitted with new pans ...	116
	W.C.'s cleansed and amended ...	95
	W.C.'s fitted with flushing appliances	130
	Additional W.C. accommodation provided	32
	Sinks and Yard Gullies trapped ...	86
	Offensive Deposits removed ...	10
STRUCTURAL DEFECTS.	Defective Roofs repaired	27
	Yards paved by Owners	97
LIMEWASHING AND CLEANSING.	Workrooms and Passages, limewashed and cleansed	503
VENTILATION AND OVERCROWDING.	Nuisances from overcrowding abated	8
	Better Ventilation secured in Workrooms	9
WATER SUPPLY.	Company's Water provided ...	13

Home Work.

(SECS. 107 TO 115).

The following table shows particulars with regard to the lists of Outworkers received during the year 1904. The lists are kept by the Town Clerk, who forwards to the Medical Officer of Health the names and addresses of those Outworkers who reside within the District of the City of Bristol.

TABLE III. **Workshops.** CITY OF BRISTOL.

OUTWORKERS.

Showing Lists received during the year 1904.

Nature of Employment.	February Lists.		August Lists.	
	No. of Lists.	No. of Outworkers.	No. of Lists.	No. of Outworkers.
Boot and Shoe Making	6	116	2	14
Cabinet Making, etc.	1	1	1	8
Manufacture of Wearing Apparel	25	1439	18	1364
	32	1556	21	1386

Upon receipt of the lists of Outworkers the special Workshop Inspectors visit the premises as far as possible in conjunction with their work under the other provisions of the Act. The number of premises visited in 1904 was 756, and 19 sanitary defects were found to exist, which were rectified; in no instance was any case found where wearing apparel was being made, cleaned, or repaired in a house, whilst any inmate was suffering from Scarlet Fever or Small Pox (see Sec. 109). Nor did any case require action to be taken under Section 110, for the reason that all such conditions as are specified in Sections 109 and 110, have, since the adoption of the Notification Act in 1900, been most carefully guarded against by a complete system of administering the Notification and Public Health Acts, in which these questions have always received special attention. So far as this City is concerned, these Clauses appear to be redundant.

Bakehouses (Secs. 97—102).

In 1883 the Sanitary control of Bakehouses, which had from 1878 until that date been under the control of H.M. Inspector of Factories, was re-transferred to the Medical Officer of Health.

The necessity for this transference became abundantly evident in Bristol soon after the resumption of these duties by the Medical Officer of Health. Under Section 15, 24 privies were removed, most of which had been found to be in a foul condition, and constituting a dangerous nuisance. The condition of the premises was also frequently found to be unsatisfactory in other particulars, and considerable improvement was soon secured.

At the same time it was noticed as a drawback that no regulations were contained in the Act with regard to construction ; so that certain underground rooms, old dilapidated premises not fit for the purpose, and similar conditions had to be tolerated.

The systematic inspection has been continued year by year with evidence of improvement.

Workshops. TABLE IV. City of Bristol.

BAKEHOUSES.

Showing defects found and remedied in each year since bakehouse inspection was instituted.

Year.	Particulars.	Total.
1884	Total contraventions found in respect of cleansing, lime-washing, defective drains, repairs, and defective ventilation.	342
1885	Ditto	244
1886	Ditto	96
1887	Ditto	132
1888	Ditto	69
1889	Ditto	65
1890	Ditto	89
1891	Ditto	80
1892	Ditto	71
1893	Ditto	36
1894	Ditto	57
1895	Ditto	74
1896	Ditto	57
1897	CITY ENLARGED IN 1897.	140
1898	Ditto	178
1899	Ditto	168
1900	Ditto	172
1901	Ditto	151
1902	Ditto	198
1903	Ditto	192
1904	Ditto (Including special work required in underground bakehouses).	250

Factory and Workshop Act, 1901.

Inspection of Bakehouses for the year 1904.

Report of the Inspector in respect of work done under the Provisions of the above Act, with particulars of the conditions found.

The number of Bakehouses found in operation was 366, being an increase of 7 as compared with 1903.

This number includes 13 Bakehouses in the Districts recently added to the City; but 6 places used in 1903 have gone out of use.

The 13 added Bakehouses are situate as follows:—1 at Avonmouth, 2 at Shirehampton, 9 at Westbury-on-Trym, and 1 at Horfield, thereby largely increasing the ground to be gone over.

The Sanitary conditions of these 13 places as found were classed as follows:—

		Number.
Bakehouses proper	Good ...	6
Ditto.	Fair ...	5
Ditto.	Indifferent	2
		13

Conditions of Curtilages generally:—

Good ...	5
Fair ...	7
Indifferent	1
	13

Eleven various sanitary defects in respect of Dilapidations, Drains, Water Closets, Light, etc., were noted, which have been remedied or are now in course of consideration.

A steady improvement is being maintained in the condition of ordinary above-ground Bakehouses. Much of this can be attributed to the effects of recent Legislation reflecting usefully in teaching Employers and Employees the necessity of embracing up-to-date ideas, and sanitary principles that in the past were often sadly neglected.

Unsuitable places are gradually being improved, or replaced by approved modern structures, Machines are taking the place of manual dough kneading in many places, thereby dispensing with much personal handling and insuring increased cleanliness in manufacture. Cleaner and quicker working ovens are steadily coming into use, thereby considerably reducing the heavy work and hours of employment.

1,011 various inspections and visits were made to these Bakehouses during the year, and 250 various defects (as shown in table appended), as compared with 192 in 1903, were dealt with. This number appears at first sight to be an increase of the defects found in 1903, but it is not so, as the former total includes all the measures of Drain alterations, Improvements, Ventilation and Structural alterations entailed by the Provisions of the Act coming into force in 1904, hence the apparent increase.

It was necessary to serve 234 various notices in respect of this work during the year, and it is satisfactory to be able to report that all the work required has been done, except in two cases, one in which the premises have become void, and in the remaining one structural alterations are under consideration.

A special report dealing with the under-ground Bakehouses is appended, and tables giving particulars, and annual results.

S. DIMOND,

Inspector of Bakehouses.

Underground Bakehouses, January, 1905.

Report of the Inspector of Bakehouses as to the number and condition of Underground Bakehouses in operation existing within the City before the Factory and Workshop Act, 1901, came in force on January 1st, 1904, and the results of the steps taken under the Regulations of the Health Committee up to December 31st, 1904, under the direction of the Medical Officer of Health.

Previous to this Act, the supervision of such places was carried on under the Factory and Workshop Act, 1883, and in 1884, I commenced a systematic inspection which has been maintained till now.

In 1884, totally Underground Bakehouses to the number of 54 were in operation, and there existed a number of others not in use, and by the end of 1887 the number in occupation rose to 61.

Some of the worst places had been voluntarily closed but others had been re-opened, and a few new ones constructed, as there were then no Regulations in force to prevent an underground place being used as a Bakehouse, provided that certain sanitary conditions were observed in respect of the position of Water Closets, Water Supply, Drainage, and Sleeping Rooms.

It was then shown in the Annual Reports that a considerable number of these old places were unfit for Bakehouses, and it appears that in times past, any place that would hold the oven and give a modicum of working space was deemed fit for the purpose.

Lacking powers to directly prevent the use of these places, steps were taken to get all reasonable improvements and repairs effected, and a higher standard of sanitary conditions was insisted upon by persuasion, and under notice when necessary, with good results.

In consequence of this systematic inspection, the advance in sanitary knowledge, and continual moral pressure brought to bear, with the exigencies of trade, the number in use gradually declined until in 1895 the Factory and Workshop Act was amended, and Section 27 thereof prohibited the use of an underground place as a Bakehouse, which was not so used at the commencement of that Act.

By this measure, a number of places that were temporarily disused from various causes were prohibited, and the number in use declined, until in 1901 there were but 36 totally Underground Bakehouses in operation.

In this year (1901) the Factory and Workshop Act was amended, a provision being inserted that after the 1st of January, 1904, an Underground Bakehouse should not continue to be used without a certificate from the Local Authority.

At this time there were 33 totally underground places in operation, but by a clause in the Act which provides that a bakehouse of which the floor is situate more than 3 feet below the surface of the adjoining road or ground, shall be deemed to be an Underground Bakehouse, 18 other premises came within the purview of the Act to a greater or less extent, so that a total of 51 had to be dealt with.

At the direction of the Sub-Committee they were carefully examined with the Medical Officer, and the then existing conditions were computed and classed for reporting as follows, in order to comply with the Committee's regulations and suggestions.

		Number
A.	Those that could be put in fair order without much structural alteration ...	11
B.	Those not placed so well, lighted, or ventilated, and requiring more alterations and repairs to bring them up to standard	19

		Number.
C.	Those that were not at all satisfactory on many points and that required much alteration or re-construction of parts to bring them up to requirements	18
D.	Those practically unfit and requiring entire re-construction	3
	Total ...	51

In order to ensure compliance with the requirements of the Health Committee, a copy of the Regulations and Requirements* was delivered to each of the Parties interested, and plans and specifications of the proposed alterations were required to be sent in; these have been submitted for the Committee's approval from time to time, and the result of these operations are, that of the 33 totally Underground Bakehouses, 20 have been altered and improved according to plans and specifications submitted, and certificates granted. 12 have been closed for Bakehouse purposes, the Occupiers and Owners having provided above-ground Bakehouses, or removed to other premises. And in the last case most of the requirements have been complied with, the question of lighting only being under consideration.

Of the 18 partially Underground Bakehouses, 8 have been altered repaired and improved according to specifications, and certified; 6, not Underground, have been dealt with under the general provisions of the Act as directed by the Health Committee after inspection; and 3 have been given up for the purpose of Bakeries, as they are not in a fit condition for Certification; and the remaining one has become void.

Much time and extra work and attention was given to effect this result, and by the operation of this Act a great improvement of the general condition of Bakehouses has been obtained, with but little friction and without resource to legal measures.

S. DIMOND,
Inspector of Bakehouses.

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* These were set forth at length in the M.O.H.'s Annual Report for 1903.

TABLE V.

1904.

Table of Bakehouse Inspection for the Year.

With particulars of Condition, Contraventions, Action taken, and Results.

Total number of inspections and visits...	...	1,011
Number of Bakehouse premises found to be in good or passable order and condition	777	
Ditto ditto not in satisfactory condition from one of the undermentioned defects...	234	
	1,011	1,011

PARTICULARS OF DEFECTS AND CONTRAVENTIONS.

Total Defects.	Nature of Defects, etc.		Total Notices.	Description of Notices Complied With.	
250	Contraventions of lime-washing regulations	106	234	Informal Notices given to abate nuisances, effect repairs, or comply with Regulations	145
	Ditto General cleaning	21			
	Bakehouse premises with defective drainage	26			
	Ditto with defective floors, roofs. paving, or other dilapidations	40		Various Written Notices served and complied with, or are under way	89
	Ditto with defective ventilation, improv'd	31			
	Ditto Manure accumulations and other deposits	7			
	Smoke nuisances dealt with	2			
	Sinks and Stables repaired	11			
	Additional Closets required	3			
	Drain Interceptions required	3			
250		250	234		234

A considerable portion of the above-named defects related to improvements secured in underground Bakehouses, in compliance with the Health Committee's requirements under the provisions of the 1901 Act.

See Special Report attached.

S. O. DIMOND, *Inspector.*

FACTORY ACT. HOME OFFICE FORM.

Annual Report of Medical Officer of Health for 1904, for the City of Bristol.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances

Premises.	Number of Inspections.	Number of Notices. Written	Number of Prosecutions.
FACTORIES (Including Factory Laundries)	863	124	None.
WORKSHOPS (Including Workshop Laundries)	3308		None.
WORKPLACES			
HOMEWORKERS' PREMISES	756		None.
TOTAL	4927	124	None.

2.—DEFECTS FOUND.

Particulars	Number of defects Found	Number of defects Remedied	Number of defects Referred to H.M. Inspector	Number of Prosecutions
*Nuisances under the Public Health Acts** :—			Re-employment of young persons 45	
Want of cleanliness	503	503		
Want of ventilation	9	9		
Overcrowding	8	8		
Want of drainage of floors				
Other nuisances	229	229		
† Sanitary accommodation insufficient	32	32		
† Sanitary accommodation unsuitable or defective	452	452		
† Sanitary accommodation not separate for sexes	4	4		
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (S. 101)	None			
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	None			
Failure as regard lists of outworkers (S. 107)	None			
Giving out work to be done in premises which are unwholesome (S. 108) / infected (S. 110)	None			
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109)	None			
Other offences	None			
Total	1237	1237	45	None

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* Including those specified in Sections 2, 3, 7 and 8, of the Factory Act as remediable under the Public Health Acts.

†Section 22. Public Health Acts Amendment Act was adopted in February, 1891. Standard of sufficiency adopted, 1 for each 25 males. Standard of suitability, generally in accordance with Home Office Memorandum.

3.—OTHER MATTERS.

Class.	Number.	
Matters notified to H.M. Inspectors of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	None	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5): Notified by H.M. Inspector	82	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5): Reports (of action taken) sent to H. M. Inspectors	85	
Other	None	
Underground Bakehouses (S. 101) :—		
In use during 1903	51	
Certificates granted in 1903 and 1904	35	
In use at the end of 1904	35	
Homework :—	Number of	
*Lists of Outworkers** (S 107) :—	Lists.	Out-workers.
Lists received	53	3023
Addresses of outworkers forwarded to other Authorities		
Addresses of outworkers received from other Authorities	1	4
Homeworkers in unwholesome or infected premises :—	Wearing Apparel.	Other.
Notices prohibiting homework in unwholesome premises (S. 108)	None	
Cases of infectious disease notified in homeworkers' premises	None	
Orders prohibiting homework in infected premises (S. 110)	None	
Workshops on the Register (S. 131) at the end of 1904 :—		
Important classes of workshops, such as workshop bakehouses, may be enumerated here	1536	
Total number of workshops on Register	1536	

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*The Lists should be received twice in the year. The year's figures required in the Table are then obtained by adding together the two half-yearly totals.

1904—1905.

Baths and Wash-houses.

The following figures are returned for the year's work:—

Year ended 25th March, 1905,	No. of Bathers. Swimming Baths.	Private Baths	Women Washing Clothes.
"Victoria," Clifton (Baths only)	14,512	1,129	...
"Royal," Kingsdown (Baths only)	41,874	...	...
Broad Weir	33,112	33,845	20,439
Mayor's Paddock, New Cut	28,423	27,111	13,102
Jacob's Wells (Baths only)	52,422	25,122	...
Rennison's (Swimming Bath only)	14,133	...	..
Barton Hill	66,991	30,224	...
Total ..	251,467	117,431	33,541

1903	165,642	92,695	39,118
1904	251,467	117,431	33,541
	+85,825	+24,736	–5,577

(Up to March 25th, 1905).

Particulars supplied by Mr. J. KANE.

The City Analyst, Mr. F. Wallis Stoddart, F.I.C., F.C.S., has kindly supplied the following returns:—

"FOOD AND DRUGS ACTS."

SUMMARY OF RETURNS FOR 1904.

Articles,	Analysed.	Condemned.
Milk	284	33
Butter	372	8
Margarine	11	0
Pepper	2	0
Spirits	20	9
Golden Syrup ...	0	0
Baking Powder Flour and Meal	15	0
Soda Water	18	3
Cheese	1	0
Beer and Stout ...	6	0
Various	11	0
	740	53

The working of these Acts in the City of Bristol is entrusted to an Inspector acting under the Watch Committee, and is not administered by the Health Committee.

Meteorological Observations for Bristol, 1904.*

January.—Although commencing with a cold frosty day with a few fugitive snowflakes, the weather throughout this month proved of an unsettled and unseasonable type. A short period of dry and cold conditions, however, prevailed between the 17th and 25th.

The mean temperature (max. and min.) of the month was 40·2 degrees, exceeding the average by just a degree. The maximum reading was 52·6 degrees on the 13th, and the minimum 24·3 degrees on the 1st—an extreme range of 28·3 degrees. The warmest day occurred on the 27th with a mean temperature of 49 degrees, and the coldest on the 1st, mean 30·4 degrees. Frost occurred upon six days.

The rainfall varied from 3·58 inches at Clifton to 3.02 inches at Fishponds, falling upon 21 and 19 days respectively. These amounts show an excess of about half an inch.

Mean atmospheric pressure at 9 a.m. was 29·959 inches, a value slightly below normal. The daily readings varied from a maximum of 30·766 inches on the 22nd, to a minimum of 29·055 inches on the 14th.

February.—With three exceptions every day of the first three weeks made contributions, generally of a substantial character, to the total rainfall of this month. The last week, however, opened with some dry weather, followed by cold and wintry conditions during the closing days; the 29th proving the coldest day experienced in Bristol for over 13 months.

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* The Medical Officer of Health is particularly indebted to Mr. H. H. Harding for kindly supplying these particulars.

Mean temperature of the month was 39·8 degrees, just under half a degree above the average. The extremes were 52·3 degrees on the 21st, and 22·3 degrees on the 29th—an extreme range of 30 degrees. The warmest day was the 21st, with a mean temperature of 49·8 degrees; and the coldest the 29th, mean 27·4 degrees. Ground frosts were very frequent, but only upon three occasions did the protected thermometer fall to or below freezing point.

The rainfall at Clifton amounted to 4·09 inches, and at Fishponds to 3·53 inches; recorded on 22 and 20 days respectively. These totals show an excess of over an inch and a half.

Mean atmospheric pressure at 9 a.m. was unusually deficient, the figures being 29·596 inches. The maximum reading was 30·207 inches on the 28th, and the minimum 28·908 on the 9th.

March.—After giving during its first few days some very cold weather, quite as severe as any experienced throughout the preceding three months, this month settled down to show it was fully entitled to its sobriquet of "March, many weathers." Although so changeable, however, until its closing days the month certainly belied its reputation in one respect, the wind seldom attaining much strength.

The mean temperature was 40·9 degrees, this being nearly two and a half below the average of the previous decade. The extremes were 57·4 degrees on the 9th, and 25·6 degrees on the 1st—a range of 31·8 degrees. The warmest day occurred on the 20th, with a mean temperature of 51·4 degrees; and the coldest on the 1st, mean 30·5 degrees. There were nine frosty nights.

The total rainfall varied from 2·17 inches at Clifton, to 1·71 inches at Fishponds; falling on 19 and 16 days respectively. These amounts show a small deficiency.

Mean atmospheric pressure was in excess of normal, the figures being 30·010 inches. The extreme readings at 9 a.m. were 30·449 inches on the 9th, and 29·363 inches on the 30th.

April.—Unsettled and somewhat rough weather marked the earlier portion of the month, but finer conditions predominated throughout the latter half. In strong contrast to its predecessor of 1903, on no occasion did the temperature descend to freezing point, but on the other hand there was nothing exceptional in the warmth of the daytime.

Mean temperature was 48·6 degrees, a slight excess over normal, and nearly four degrees above that of the month in 1903. The maximum was 63·7 degrees, occurring on the 18th; and the minimum 35·3 degrees—an extreme range of 28·4 degrees. The warmest day was the 30th, with a mean temperature of 53·2 degrees; while the coldest was the 11th, mean 44·4 degrees.

At Clifton the total rainfall was 2·29 inches, and at Fishponds 1·87 inches; falling upon fifteen days. The amounts show the fall locally to have been about normal.

Mean atmospheric pressure was 29·971 inches, a value slightly above the average. The maximum reading at 9 a.m. was 30·237 on the 26th, and the minimum 29·343 on the 13th.

May.—Although decidedly wet and unsettled upon the whole, this month must certainly be reckoned a favourable one in respect to its weather; for, in spite of its frequent rainfalls, temperature with slight exception was warm and equable throughout.

Mean temperature closely approached the average of the preceding decade, the figures being 52·6 degrees. The maximum was 72 degrees on the 16th; and the minimum 37 degrees on the 8th—an extreme range of 35 degrees.

The warmest day was the 30th, with a mean temperature of 60·8 degrees; and the coldest the 8th, with a mean of 42 degrees.

The total rainfall was 3·19 inches at Clifton, and 2·76 inches at Fishponds; falling upon eighteen days. These amounts show an excess of nearly an inch.

Mean atmospheric pressure for the month was 29·956 inches, these figures showing a slight deficiency. The highest reading at 9 a.m. was 30·197 inches on the 13th, and the lowest 29·534 inches on the 7th.

June.—This month opened with a heavy and decided rainfall, totalling locally over half an inch; but in spite of this fact, it proved upon the whole drier than usual. This could not be said to be due to the prevalence of any really settled summer weather, conditions throughout being cool and changeable, with a decided deficiency of sunshine.

The mean temperature of the month was 56·9 degrees, this showing a falling off from the average of two and a half degrees; being a greater departure from normal than that of any other month of the year. The maximum was 75·3 degrees occurring on the 30th, and the minimum 43·8 degrees on the 4th—a range of 31·5 degrees. The warmest day was the 30th, with a mean temperature of 62·1 degrees, and the coldest the 10th, mean 52·6 degrees.

The rainfall at Clifton and Fishponds was 1·92 and 1·93 respectively, falling upon 13 and 9 days. These figures show a departure from normal at Clifton of just half an inch.

Mean atmospheric pressure was above the average, the figures for 9 a.m. being 30·061 inches. The extremes were 30·413 inches on the 22nd, and 29·598 inches on the 25th.

July.—Commencing with a week of somewhat cool conditions, a period of sunshine and heat then set in, which lasted until the end of the third week, after which a series of welcome and copious rainfalls brought the month to a close. Such a favourable summer month proved the more welcome by contrast with the preceding cold and wet seasons.

Mean temperature exceeded the average by over a degree, the figures being 63·7 degrees. The extremes for the month were 84·5 degrees on the 10th, and 48·3 degrees on the 8th—a range of 36·2 degrees. The warmest day occurred on the 10th, with a mean temperature of 70·7 degrees; and the coldest on the 1st, mean 58·4 degrees.

The total rainfall of the month varied locally from 4·40 inches at Clifton, to 3·64 inches at Fishponds; falling upon 14 and 9 days respectively. These amounts exceeded the average by one and a half inches, this being the first excess yielded by July since 1895.

Mean atmospheric pressure was 30·025 inches, these figures being above the average. The extreme readings for 9 a.m. were 30·257 inches on the 8th, and 29·623 inches on the 28th.

August.—The heavy rainfalls which were so prevalent during the last week of July happily passed away with that month, Bank Holiday week proving most fine and summer-like. The remainder of the month, however, was generally of an unsettled type, frequent rainfalls alternating with short periods of fair conditions; the most noteworthy characteristic of the weather being a spell of unusual cold for the time of year, from the 20th to 25th inclusive.

The mean temperature was just 60 degrees, this being nearly one and a half degrees below the average, this deficiency being entirely due to the remarkably cold period referred to. The extremes were 82·7 degrees on the 7th, and 42·2 degrees on the 25th—a range of 40·5 degrees. The warmest day occurred on the 4th, with a mean temperature of 68·2 degrees; and the coldest on the 25th, with a mean of 52·7 degrees.

The rainfall locally varied from 3·23 inches at Clifton, to 3·42 inches at Fishponds, falling upon 15 and 16 days respectively. These amounts show a fairly normal fall for the district.

Mean atmospheric pressure was in excess, the figures being 30·024 inches. The maximum reading at 9 a.m. was 30·230 inches on the 8th, and the minimum 29·718 inches on the 22nd.

September.—Plenty of sunshine, enough rain for immediate purposes, and winds seldom rising above the strength of a pleasant breeze, were the dominant characteristics of this month from the first day to the last. If the month had a failing it was in regard to its temperature, which throughout was much below that usually associated with September.

The mean temperature was 55·5 degrees, nearly two below normal and one and a half below that of the month in 1903. The maximum was 70·3 degrees on the 17th, and the minimum 39·0 degrees on the 21st—a range of 31·3 degrees. The warmest day occurred on the 17th, with a mean temperature of 62·1 degrees; and the coldest on the 21st, mean 49·9 degrees.

The rainfall was 1·54 inches at Clifton, and 1·23 inches at Fishponds; falling on 10 and 12 days respectively. These results show a deficiency in this locality of one and three-quarter inches.

Mean atmospheric pressure for the month was 30·069 inches, this being in excess of normal. The extreme readings at 9 a.m. were 30·272 inches and 29·656 inches, occurring on the 18th and 14th respectively.

October.—This month, usually the wettest of the twelve, proved remarkably fair and dry, apart from a short period of very wet and boisterous weather from the 5th to the 10th inclusive. It must be admitted, however, that conditions were often dull and foggy, with at times a very damp atmosphere; but, on the other hand, there were many beautiful autumnal days.

The mean temperature was 50·5 degrees, this being nearly a degree above normal. The extremes were 62·3 degrees on the 26th, and 33·4 degrees on the 15th—a range of 28·9 degrees. The warmest day occurred on the 18th, with a mean temperature of 58·3; and the coldest on the 15th, mean 44·2 degrees.

The total rainfall at Clifton was 1·37 inches, and at Fishponds 1·17 inches; falling upon 12 and 9 days respectively. These amounts show a deficiency in the district of nearly two and a half inches.

Mean pressure was 30·121 inches, these figures being over two-tenths of an inch above normal. The highest reading at 9 a.m. was 30·509 inches on the 13th, and the lowest 29·629 inches on the 7th.

November.—For the first three weeks the weather of this month was practically a continuation of the type prevailing throughout October, conditions therefore being on the whole remarkably fine, dry, and mild. On the 21st, however, very wintry weather set in with great suddenness; snowfalls becoming general, while frosts of great severity were reported from all parts of the country.

Mean temperature was 42·5 degrees; this value being over two degrees below normal. The extremes were 56·8 degrees on the 3rd, and 18·3 degrees on the 24th—a range of 38·5 degrees. The warmest day was the 11th, with a mean temperature of 51·5 degrees; and the coldest the 24th, mean 25·6 degrees. It may be noted that this day was by far the coldest of the year. Nine frosty nights were registered.

The rainfall locally varied from 2·12 inches at Clifton, to 1·83 at Fishponds; falling upon 10 days. These amounts show a deficiency of just about an inch.

Mean atmospheric pressure was much in excess, the figures being 30·110 inches. The extremes for 9 a.m. were 30·561 inches on the 14th, and 29·549 inches on the 22nd.

December.—A month of sharp contrasts, the first half being very wet, rainfalls being of daily occurrence; while anticyclonic conditions dominated the weather throughout the latter part. This latter type of pressure was responsible for the prevalence over England of a fog of exceptional length and density during the week preceding Christmas Day.

Mean temperature did not differ much from the average, the figures being 40·9 degrees. The extremes were 55·5 degrees on the 16th, and 26·8 degrees on the 24th—a range of 28·7 degrees. The warmest day occurred on the 17th, with a mean temperature of 53·3 degrees; and the coldest on the 23rd, mean 29·6 degrees. There were eight frosty nights.

Rainfall varied locally from 2·32 inches at Clifton, to 2·12 inches at Fishponds; falling upon 20 and 18 days respectively. These figures show a deficiency of about an inch.

Mean pressure was 29·934 inches, a value differing very slightly from normal. The extreme readings at 9 a.m. were 30·615 inches on the 19th, and 28·932 inches on the 12th.

Taken as a whole the year must be admitted to have been a favourable one, in spite of its somewhat deficient temperature. Without doubt its most remarkable feature was the wonderfully fine and dry weather prevailing throughout the autumn; the rainfall being continuously deficient from August onwards.

H. H. HARDING, F.R., Met. Soc.

The rainfall values for Clifton are taken at 215 feet above sea-level; and at Fishponds 160 feet.

For the rainfall figures for Clifton, and the averages used for comparison in these notes, I am indebted to the courtesy of Mr. R. F. Sturge, F.R., Met. Soc.

Rainfall of 1904.

Taken at Clifton College.

Week Ending.	Rain Inches.	Week Ending.	Rain Inches.
January 9	·619	July 9	Nil
,, 16	1·463	,, 16	·023
,, 23	·092	,, 23	·795
,, 30	1·223	,, 30	3·131
February 6	·749	August 6	·471
,, 13	2·529	,, 13	·380
,, 20	·468	,, 20	1·148
,, 27	·318	,, 27	·560
March 5	·515*	Sept. 3	·727
,, 12	·496	,, 10	·381
,, 19	·104	,, 17	·627
,, 26	·046†	,, 24	·029
April 2	·894	October 1	·321
,, 9	·649	,, 8	·645
,, 16	·792	,, 15	·142
,, 23	·307	,, 22	·523
,, 30	·422	,, 29	Nil
May 7	1·152	Nov. 5	1·310
,, 14	·251	,, 12	1·593
,, 21	·517	,, 19	·020
,, 28	·966	,, 26	·481
June 4	·423	Dec. 3	·075
,, 11	·072	,, 10	1·229
,, 18	·678	,, 17	·806
,, 25	·615	,, 24	Nil
July 2	·372	,, 31	·010

* This was mainly Snow thawed and measured in Rain Guage.

† Snow on noon 25th March.

D. RINTOUL.

Rainfall, 1904.

MONTH.	Rainfall in Inches.	Average of 23 Years.	Departure from Average.	No. of days on which ·01 inches or more rain fell.
January	3·577	2·713	+ 0·864	17
February	3·944	2·291	+ 1·653	21
March	1·930	2·228	– 0·298	16
April	2·295	2·158	+ 0·137	13
May	2·932	2·072	– 0·860	16
June	1·788	2·193	+ 0·405	10
July	4·323	2·935	+ 1·388	11
August	3·115	3·185	– 0·070	13
September	1·490	2·895	– 1·405	10
October	1·310	3·812	– 2·502	8
November	2·094	3·031	– 0·937	8
December	2·120	3·468	– 1·348	17
	30·918	32·981	– 2·063	160

Meteorology for the 52 Weeks ending 31st December, 1904.

Height above Mean Sea Level—250 feet.

1904.		BAROMETRIC PRESSURE at 32° and Sea Level.			Mean Temperature.	Highest Mean Daily Temperature.	Lowest Mean Daily Temperature.	Max. Temperature in shade	Min. Temperature at 4ft. above ground.	Min. Temperature on ground.	Mean Daily Range of Thermometer.	Greatest Daily Range of Thermometer.	Smallest Daily Range of Thermometer.	Mean Humidity	Grains of Vapour in a cubic ft. of air.	Prevalent Wind.
Week ending		Mean	Highest	Lowest												
		Inches	Inches	Inches												
Jan.	9	29·90	30·35	29·55	40·9	43·8	39·0	50·1	32·9	29·0	8·9	25·3	3·2	92	2·73	S.W.
,,	16	29·57	29·98	29·09	42·5	47·6	37·8	52·8	34·4	29·8	8·8	11·3	6·1	87	2·67	W.
,,	23	30·54	30·79	30·32	39·4	47·0	33·5	57·6	27·9	27·2	11·2	13·0	4·6	89	2·44	N.W.
,,	30	29·90	30·32	29·50	42·9	48·8	32·5	52·4	29·7	27·8	8·0	16·4	3·7	86	2·72	S.W.
Feb.	6	29·33	29·48	29·15	40·5	43·0	37·6	47·3	33·4	29·6	6·4	9·4	2·6	91	2·57	S.W.
,,	13	29·22	29·81	28·91	42·2	44·0	40·6	51·1	35·2	31·3	8·4	14·1	5·9	84	2·62	W.
,,	20	29·51	30·11	29·02	39·4	41·9	36·7	50·4	30·5	27·4	10·3	17·1	3·9	85	2·29	N.
,,	27	30·11	30·27	29·88	40·6	49·9	35·2	53·1	32·4	30·6	6·2	10·1	3·3	77	2·20	N.W. to E.
March	5	30·06	30·32	29·97	33·6	36·4	28·7	39·9	24·2	24·0	7·3	9·4	4·3	89	1·98	E.
,,	12	30·00	30·04	29·56	41·5	47·1	36·0	54·4	29·7	27·9	14·7	21·5	3·6	89	2·37	N.E.
,,	19	29·96	30·09	29·71	42·2	47·2	39·6	53·8	32·2	28·3	14·1	17·4	10·6	83	2·46	S.E. ? *
,,	26	30·18	30·39	29·92	43·7	51·0	36·8	55·1	33·8	32·5	10·0	17·0	6·0	86	2·73	W. to N.E.
April	2	29·88	30·30	29·37	43·5	46·5	40·5	51·5	33·2	30·9	10·8	15·2	7·8	74	2·44	N.W.
,,	9	30·01	30·11	29·90	48·0	49·9	47·3	54·8	42·3	37·6	7·5	9·7	4·0	75	2·80	N.W.
,,	16	26·74	30·13	29·37	49·1	51·3	45·0	61·0	37·2	34·1	12·6	20·0	7·6	76	3·00	S.W.
,,	23	30·10	30·26	29·95	50·7	52·4	47·1	63·1	39·9	37·9	15·4	21·4	8·0	74	3·14	N.
,,	30	30·14	30·25	29·94	50·4	53·5	45·3	59·1	38·7	36·6	10·0	13·0	5·4	76	3·23	N.W.
May	7	29·89	30·19	29·56	49·0	54·1	45·7	61·0	39·9	38·0	12·2	18·6	6·9	75	2·94	N.
,,	14	29·97	30·23	29·55	51·2	59·0	43·0	67·3	37·9	35·6	13·8	20·5	9·1	81	3·33	W.
,,	21	30·06	30·22	29·85	53·2	58·1	49·3	72·1	41·9	40·3	15·6	27·9	6·7	75	3·32	W.
,,	28	29·93	30·08	29·81	56·1	58·8	52·7	67·2	45·5	44·3	11·2	16·8	2·2	85	4·28	W. (very variable)
June	4	30·11	30·34	29·88	58·5	60·3	54·4	72·5	45·5	46·9	15·3	27·0	4·8	78	3·94	E.
,,	11	30·07	30·28	29·82	56·5	60·5	54·1	71·3	45·8	47·0	17·3	24·5	13·3	77	3·71	N.E.
,,	18	30·02	30·18	29·82	58·5	60·1	56·0	69·7	50·4	49·8	13·1	19·2	7·4	76	4·14	W.
,,	25	30·14	30·44	29·72	57·7	58·9	56·6	68·9	48·6	47·6	13·5	20·3	8·0	73	3·87	W.
July	2	30·02	30·24	29·88	60·1	64·0	56·7	76·7	46·4	46·9	19·8	25·4	13·2	68	4·03	N.W. changing through E. to S.W.

* In the middle of the week it was found that the Wind Vane had become stuck. How long this had been is not known. It renders the wind given last week at any rate probably incorrect.

Meteorology for the 52 Weeks.—Continued.

Height above Mean Sea Level—250 feet.

1904. Week ending		Barometric Pressure at 32° and Sea Level. Mean	Highest	Lowest	Mean Temperature.	Highest Mean Daily Temperature.	Lowest Mean Daily Temperature.	Max. Temperature in shade.	Min. Temperature at 4ft. above ground.	Min. Temperature on ground.	Mean Daily Range of Thermometer.	Greatest Daily Range of Thermometer.	Smallest Daily Range of Thermometer.	Mean Humidity	Grains of Vapour in a cubic ft. of air.	Prevalent Wind.
		Inches	Inches	Inches												
July	9	30·00	30·26	30·02	61·9	68·4	58·6	81·9	50·4	49·7	14·9	27·0	9·7	74	4·44	W.
,,	16	30·09	30·21	29·91	68·3	71·5	66·0	84·2	56·2	55·8	18·4	25·4	14·7	68	4·99	E.
,,	23	30·09	30·28	29·94	66·4	69·7	63·2	82·7	53·9	53·8	19·2	28·8	8·7	70	4·78	E.
,,	30	29·88	30·10	29·62	63·4	66·2	60·3	74·6	54.8	54·0	10·9	17·7	4·4	81	5·13	E.
Aug.	6	30·03	30·23	29·82	65·9	70·5	62·0	83·3	55·0	54·0	16·4	27·0	8·1	69	5·06	S.
,,	13	30·12	30·24	29·88	61·0	63·9	59·1	73·1	50·0	50·3	15·0	20·0	8·0	60	3·92	N.W.
,,	20	29·93	30·16	29·67	59·7	62·8	58·3	67·1	49·5	49·5	10·6	17·6	7·6	74	4·32	N.W.
,,	27	30·09	30·24	29·83	57·7	63·3	55·3	70·6	46·7	47·4	15·0	17·3	13·1	74	4·07	N.W.
Sept.	3	30·01	30·22	29·80	60·9	67·1	51·2	78·3	49·6	49·0	13·8	22·3	9·0	75	4·87	N.E.
,,	10	30·07	30·23	29·95	57·8	61·3	55·1	68·0	45·7	45·1	12·5	20·8	8·3	75	4·10	W.
,,	17	29·83	30·25	29·41	58·8	62·3	55·3	70·1	46·2	47·0	12·4	19·3	7·9	86	43·2	N.
,,	24	30·06	30·54	29·88	55·5	57·3	49·9	68·0	41·8	40·3	13·3	17·9	9·2	78	3·60	Wly.
Oct.	1	29·85	30·08	29·52	52·0	55·9	44·3	66·1	41·1	43·8	17·5	20·4	7·8	90	3·86	S.
,,	8	29·80	30·02	29·39	51·8	55·8	47·4	61·2	42·8	39·7	10·7	17·8	6·1	77	3·14	N.W.
,,	15	30·14	30·54	29·76	50·2	55·7	44·9	60·2	36·8	35·0	13·0	17·9	1·5	89	3·46	Ely.
,,	22	30·04	30·47	29·58	53·3	57·1	47·1	60·1	41·7	41·8	5·5	10·8	0·8	92	43·4	Wly.
,,	29	30·18	30·33	29·84	48·3	52·6	46·3	59·4	38·3	36·9	15·3	26·0	10·3	90	3·32	Variable
Nov	5	30·31	30·59	30·18	48·3	51·0	43·8	35·9	39·1	*	7·4	11·4	3·8	84	2·84	Ely.
,,	12	29·97	30·26	29·71	49·4	55·5	47·5	55·3	42·7	38·7	8·8	12·9	6·7	85	3·18	W.
,,	19	30·48	30·58	30·22	45·8	46·9	42·7	54·2	35·7	33·6	14·0	16·7	4·8	93	3·09	Variable
,,	26	29·80	30·04	29·54	36·0	46·3	29·9	47·4	25·2	24·9	7·8	12·8	2·1		†	N.
Dec.	3	29·95	30·16	29·74	40·7	48·0	32·6	53·4	25·6	25·3	13·7	19·8	5·1		†	Wly.
,,	10	29·55	29·75	29·34	42·5	48·9	38·1	55·9	31·5	29·9	8·4	19·4	1·8	87	2·79	Wly.
,,	17	29·64	30·18	28·94	43·0	53·7	37·5	55·8	30·0	28·9	11·3	20·5	3·4	84	2·84	S.
,,	24	30·46	30·65	30·23	36·6	47·6	30·1	48·7	26·9	28·0	5·0	9·3	1·8	92	2·3	S.E.
,,	31	30·23	30·45	29·79	41·7	48·1	35·6	51·9	28·7	29·3	7·3	12·7	2·1	84	2·66	E.S.E. (very changeable)

* Not measured. † Wet bulb froze—no determination possible.

TABLE I. Vital Statistics of Whole District during 1904 and Previous Years.

CITY OF BRISTOL.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate per 1000 population.	Under 1 Year of Age.		At all Ages.					Number	Rate per 1000 population
				Number.	Rate per 1000 Births registered.	Number	Rate per 1000 Population.					
1	2	3	4	5	6	7	8	9	10	11	12	13
1894	226,578	6,393	28·8	848	148·3	3,888	17·1	770	116			
1895	228,139	6,622	29·0	935	141·1	4,108	18·0	836	131			
1896	230,626	6,537	27·8	908	138·9	3,960	16·8	809	138			
1897	232,242	6,514	28·0	949	145·6	3,988	17·1	821	122			
EXTENSION OF CITY BOUNDARIES												
1898	316,900	9,061	28·5	1,491	164·5	5,441	17·1	881	70		5371	16·9
1899	320,911	9,336	29·0	1,467	157·1	5,844	18·2	1,048	89		5755	17·9
1900	324,973	8,972	27·6	1,185	131·9	5,397	16·6	971	79		5318	16·3
1901	329,086	8,889	27·0	1,159	130·4	5,249	15·9	1,039	79		5170	15·7
1902	334,632	9,368	27·4	1,225	130·7	5,905	17·3	1,173	115		5790	16·9
1903	338,895	9,239	27·2	1,075	116·3	4,822	14·2	1,094	118		4704	13·8
Averages for years 1894-1903 ...	288,298	8,093	28·0	1,124	138·8	4,860	16·8	944	105			
1904	343,204	9,135	26·6	1,222	133·7	5,347	15·5	1,162	109	*	5238	15·2

* The information required is not available.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purpose of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the Institutions in respect of the deaths in which corrections have been made should be given on the back of this Table.

Area of District in acres (exclusive of area covered by water)	11,705.	Total population at all ages	328,945	At Census of 1901
		Number of inhabited houses	58,235	
		Average number of persons per house ..	5·6	

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions within the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
Royal Infirmary, General Hospital, Children's Hospital.	Royal Infirmary. General Hospital. Children's Hospital.	City Hospitals :— Novers Hill, Ham Green, Clift House (temporary only).

Vital Statistics of separate Localities (Registration Sub-Districts) in 1904 and previous years.

CITY OF BRISTOL.

Names of Localities.	1.—Ashley.				2.—Bedminster.				3.—Clifton.			
Year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
*1894 ...												
*1895 ..												
*1896 ...												
*1897 ...												
*1898 ...												
1899 ...	38,921	880	496	108	53,814	2,010	1,014	344	46,869	770	658	97
1900 ...	40,107	843	510	109	54,828	1,938	909	236	47,301	660	577	74
1901 ...	42,548	877	472	73	55.838	1,984	894	248	46,820	701	552	71
1902 ..	40,881	875	502	100	61,672	2,087	968	237	44,260	665	591	77
1903 ...	42,039	943	462	92	63,142	2,041	797	229	44,435	660	494	56
Averages of Years 1894 to 1903.												
1904 ...	42,842	894	411	75	64,505	2,003	850	243	44,446	688	556	68

Names of Localities.	4.—Knowle.				5.—Redcliff.				6.—St. George.			
Year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
*1894 ...												
*1895 ..												
*1896 ...												
*1897 ...												
*1898 ...												
1899 ...	8,346	339	141	42	15,964	372	342	73	48,155	1,783	819	278
1900 ...	8,585	352	171	45	15,772	331	282	50	48,763	1,764	725	242
1901 ...	8.671	401	146	37	15,303	289	264	50	50,501	1,798	755	248
1902 ..	13,709	452	199	56	12,904	286	253	46	58,194	1,842	884	253
1903 ...	14,058	451	153	39	12,348	291	187	41	59,738	1,822	747	214
Averages of Years 1894 to 1903.												
1904 ...	14,679	522	200	65	11,925	261	189	37	61,670	1,779	853	273

Names of Localities.	7.—St. Paul, and St. Augustine.				8.—St. Philip.				9.—Stapleton.			
Year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
*1894 ...												
*1895 ..												
*1896 ...												
*1897 ...												
*1898 ...												
1899 ...	38.283	910	651	154	52,909	1,656	841	271	17,650	530	251	63
1900 ...	38,336	827	544	100	53,067	1,603	907	249	18,214	491	238	53
1901 ...	37,698	793	531	144	52,269	1,477	794	208	19,438	569	221	80
1902 ..	31,840	845	576	130	48,891	1,665	997	258	22,191	607	257	60
1903 ...	31,378	774	431	98	48,986	1,614	711	203	22,771	553	214	64
Averages of Years 1894 to 1903.												
1904 ...	30,868	766	517	120	48,810	1,545	814	238	23,459	575	260	62

* The Registration Sub-Districts were so interchanged and altered at the Extension of the City in 1897, by the consequent re-arrangement of Boundaries in 1898, that this Table cannot be given for previous years.

CITY OF BRISTOL.

Cases of Infectious Disease notified during the Year ending 31st December, 1904.

Notifiable Diseases.	Cases Notified in Whole District							Total Cases Notified in each Locality.											No. of Cases Removed to Hospital from each Locality.										
	At all Ages	At Ages—Years Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards	Ashley	Bedminster	Clifton	Knowle	Redcliff	S. George	S. Paul and S. Augustine	S. Philip	Stapleton	Public Insts.	Notbelonging to Borough	Ashley	Bedminster	Clifton	Knowle	Redcliff	S. George	S. Paul and S. Augustine	S. Philip	Stapleton	Public Insts.	Notbelonging to Borough
Small-pox	34	...	3	6	12	12	1	17	8	...	...	1	1	4	2	...	1	...	17	8	...	...	1	...	4	2	...	...	...
Cholera	...	..	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Diphtheria	1036	28	316	561	72	58	1	68	92	71	73	9	105	44	108	362	96	8	29	30	15	35	4	37	15	49	257	1	8
Membranous Croup ...	15	1	11	3	...	...	...	...	3	...	...	...	8	...	2	2	...	..	...	1	...	..	...	4	1	1	...	...	...
Erysipelas	256	2	8	22	27	159	38	25	36	23	14	4	42	33	60	12	7	..	...	2	...	...	1	2	3	...	...	...	...
Scarlet Fever ...	1258	8	378	743	82	47	...	108	344	124	183	48	168	92	73	85	29	4	36	151	54	46	33	67	45	49	33	18	4
Typhus Fever ...	...	..	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Enteric Fever ..	172	...	15	62	46	49	...	6	10	8	3	7	34	7	62	1	7	27	3	7	4	1	5	25	7	50	...	3	27
Relapsing Fever ...	...	...	...	...	...	...	...	..	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...	...	...	...	..	..	..	..	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	27	...	...	..	9	18	...	4	2	1	2	..	6	1	8	1	2	...	...	...	...	...	...	...	...	...	1	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	..	...	...	...	...	...
Totals ...	2798	39	731	1397	248	343	40	228	495	227	275	69	364	181	315	463	142	39	85	199	73	82	44	135	75	151	291	22	39

CITY OF BRISTOL.

WESTBURY-ON-TRYM REGISTRATION SUB-DISTRICT.

Cases of Infectious Disease notified during the 4th Quarter, ending 31st December, 1904.

NOTIFIABLE DISEASES.	CASES NOTIFIED IN DISTRICT.							
	At all Ages	At Ages—Years						
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards	No. of Cases removed to Hospital
Diphtheria ...	8	1	1	4	...	2	...	5
Erysipelas ..	1	.	...	...	..	1	...	...
Scarlet Fever ...	18	1	8	9	...	...	...	9
Total ...	27	2	9	13	..	3	...	14

CITY OF BRISTOL.

Causes of, and Ages at, Death during the year ending 31st December, 1904.

Cause of Death.	Deaths in Whole District at Subjoined Ages.							Deaths in Localities (at all Ages)											Deaths in Public Institutions
	All ages.	Under 1	1 and under 5	5 and under 15	15 & under 25	25 & under 65	65 & upwards	Ashley	Bedminster	Clifton	Knowle	Redcliff	S. George	S Paul and S Augustine	S Philip	Stapleton	Municipal Institutions	Not belonging to Borough	
SMALL-POX	1	...	...	...	...	1	...	...	...	...	...	..	..	...	...	...	...	1	1
Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MEASLES	94	15	74	5	...	...	...	4	40	...	...	3	21	9	17	...	...	...	1
SCARLET FEVER	36	1	23	8	2	2	...	5	7	4	8	3	5	2	1	1	...	...	16
WHOOPING-COUGH ...	110	58	49	3	...	...	...	6	33	7	5	6	23	10	15	5	...	...	3
DIPHTHERIA & MEMBRANOUS CROUP ...	102 3	8	55 3	35	2	2	...	2	13	3	3	2	20	7	21 1	23 2	6	2	58
Croup	2	...	2	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
FEVER: Typhus	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...
FEVER: Enteric	26	. .	...	5	8	13	...	...	3	2	2	1	7	2	5	...	2	2	16
FEVER: Other continued ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
Influenza	27	1	...	...	...	12	14	3	1	5	1	1	3	2	2	2	7	...	7
Cholera	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
DIARRHŒA	206	174	22	3	..	2	5	16	40	2	7	8	63	23	37	7	2	1	15
Enteritis	43	30	8	...	1	2	2	6	9	4	2	1	5	6	5	1	1	3	11
Puerperal fever	16	...	...	...	5	11	...	2	2	1	1	...	3	...	5	1	1	...	4
Erysipelas	9	2	...	...	1	5	1	1	3	...	...	...	1	1	...	1	2	...	3
Other septic diseases	7	...	2	...	...	4	1	2	1	...	...	...	1	2	1	...	...	...	6
Phthisis	413	2	10	12	91	291	7	31	52	26	17	26	65	39	63	12	79	3	97
Other Tubercular diseases ...	144	35	38	27	18	26	...	16	29	13	5	1	29	10	16	7	12	6	36
Anthrax	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Cancer, malignant disease ...	285	...	1	...	4	180	100	27	44	44	15	10	31	25	37	9	32	11	76
Bronchitis	499	100	39	7	6	117	230	34	66	54	14	23	83	62	103	24	35	1	49
Pneumonia	361	85	119	14	16	83	44	20	69	32	6	11	78	30	68	19	28	...	64
Pleurisy	6	1	2	...	...	2	1	...	...	1	1	1	...	1	1	...	..	1	2
Other diseases of Respiratory Organs	86	8	9	4	4	40	21	6	13	8	4	1	5	9	17	1	21	1	27
Alcoholism / Cirrhosis of liver	55	...	...	1	...	48	6	7	13	7	...	3	5	3	12	2	3	...	14
Venereal diseases	12	9	...	...	...	3	...	...	2	...	...	2	3	1	1	1	2	...	2
Premature birth	230	230	...	...	...	...	...	20	42	15	18	2	54	26	38	12	3	...	4
Diseases and accidents of parturition	32	6	...	...	7	19	...	3	5	5	4	1	5	2	2	2	2	1	7
Ac. Rheumatism, Rh. Fever ...	28	...	2	3	4	10	9	1	5	2	3	1	3	2	5	3	3	...	4
Heart diseases	570	21	4	21	26	269	229	52	73	79	8	25	94	55	75	39	60	10	102
Diseases of Blood Vessels ...	297	..	1	2	1	119	174	36	40	39	10	15	31	34	37	12	39	4	52
Diseases of Nervous System ...	429	143	35	20	18	123	90	21	53	40	18	12	55	37	56	25	106	6	130
Disease of Urinary System ..	167	3	2	3	7	95	57	14	22	21	5	6	15	18	20	8	31	7	63
Other Diseases of Digestive System	185	33	9	10	13	79	41	15	33	20	5	6	18	25	34	7	8	14	75
Accidents—Negligence ...	133	7	12	17	18	50	29	13	24	12	5	3	13	14	16	2	10	21	54
Suffocation—Overlying ...	29	19	3	...	1	6	...	5	7	...	...	1	2	3	5	2	4	...	4
Homicide	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1
Suicide	19	...	...	...	3	12	4	1	4	5	...	...	1	4	2	2	...	...	2
All other causes	684	231	21	19	21	71	321	42	100	105	33	14	111	53	95	28	89	14	152
All causes	5347	1222	545	219	277	1698	1386	411	850	556	200	189	853	517	814	260	588	109	1158
District Death Rates								9·59	13·17	12·50	13·62	16·85	13·83	16·75	16·67	11·08	...	...	.
District Birth Rate								20·86	31·05	16·48	35·56	21·89	28·84	24·81	31·85	24·51	...	...	...
Deaths of Infants under 1								75	243	68	65	37	273	120	238	62	30	11	
Number of Births								894	2003	688	522	261	1779	766	1555	575	102	...	...
Infantile Rate ..								83·88	121·31	98·83	124·52	141·76	153·45	156·65	153·05	107·82			

CITY RATES.

No. of Births.	Birth Rate.	DEATH RATE.			Zymotic Rate.	Infantile Rate.
		This Year.	Last Year.	10 Years Average		
9145	26·60	15·58	14·22	16·86	1·68	133·77

Average age at Death of persons aged 65 *and upwards* 75 *years and* 3 *months*

Births of Illegitimate Children, 281

Deaths „ „ 85

Inquests 479

Uncertified Deaths 22

CITY OF BRISTOL.

WESTBURY-ON-TRYM REGISTRATION SUB-DISTRICT.

Causes of, and Ages at, Death during the 4th Quarter ending 31st December, 1904.

Cause of Death.	Deaths in District at Subjoined Ages.							Deaths in Public Institutions
	All Ages	Under 1	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	
DIPHTHERIA & MEMBRANOUS CROUP	1	1	...	...	...	...	...	...
FEVER		..	...	..	...	...	...	...
Influenza	3	...	...	1	..	...	2	...
DIARRHŒA	1	...	1	...	...	..	...	1
Enteritis	1	...	...	...	...	1	..	...
Phthisis	3		...	..	...	2	1	..
Other Tubercular diseases	2	...	..	1	...	...	1	...
Cancer, malignant disease	3	...	...	...	...	2	1	...
Bronchitis	1	..	...	..	...	1	...	...
Pneumonia	3	2	...	..	...	1	..	1
Alcoholism Cirrhosis of Liver	1	1	..	...	..	...	...	...
Premature birth	2	2	...	...	...	..	...	...
Diseases and accidents of parturition	1	...	..	...	1	...	...	..
Heart diseases	2	...	...	...	...	1	1	1
Diseases of Blood Vessels	2	...	...	...	...	...	2	...
Diseases of Nervous System	3	.	1	...	1	...	1	...
Diseases of Uninary System	1	...	..	...	...	1	..	1
Other Diseases of the Digestive System	1	...	...	1	...	...	...	...
Accidents—Negligence	2	...	...	..	...	2	...	..
All other causes	8	3	1	...	1	...	3	...
All causes	41	9	3	3	3	11	12	4

No. of Births.	Birth Rate.	Death Rate.	Infantile Rate.	Zymotic Rate.
63	18·74	12·19	142·85	0·59

Average age at death of persons aged 65 and upwards, 72 years and 6 months.
Births of Illegitimate Children, 2
Deaths ,, ,, 0
Inquests 4
Uncertified Deaths 0

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